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EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, July 15, 1911.

S. ARLOING'S MONUMENT.—By unanimous decision and on the proposition of Professor Chauveau, the general inspector of the veterinary schools of France, the teaching faculties of the schools of Alfort, Lyon and Toulouse, with the professors of the University of Lyon, have decided to erect a monument to the memory of Professor S. Arloing.

An honorary and an active committee have been appointed. A long list of the members is published in the circular that has just been issued, and among which are names of prominent scientists, physicians and veterinarians from all over Europe. They form a grand committee which makes a strong call to all those who, knowing the work done by Arloing, wish to associate themselves with this act of admiration and of justice.

As a learned scientist, as a teacher, as a veterinarian, Arloing has rendered services which will never be forgotten. General and comparative medicine owe him much.

Some years ago the REVIEW made a call to the veterinary profession of America for a contribution in favor of a similar

occasion, to honor Professor Nocard. Our colleagues over the Atlantic answered nobly, and their contribution was very large. I hope that to-day they will permit me to again apply to them and that they will send their contributions to Professor Maignon at the Lyon Veterinary School, or to myself, if they prefer it.

The circular states that subscribers of at least 25 francs ($5) will receive a bronze artistic medal representing Professor S. Arloing.

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ANAPHYLAXY AGAIN.—It is some time since I have entertained our readers on this subject, and yet numerous have been the communications that have appeared in scientific journals, as much upon the mode of its production and its intimate mechanism as well as upon the means to overcome it, or the anti-anaphylaxy. After remaining for a long time merely a question of the laboratory, it has become one of daily observation in practical clinics on account of the growing application of serotherapy. Indeed, numerous have been the accidents observed in human or veterinary medicine after successive injections of different therapeutic sera; and their number renders still more important the necessity to find the proper means to overcome them.

In previous chronicles I have given some attention to the questions of anaphylaxy in general; to-day, from a magistral Review by Mr. R. Pecherot, published in the *Journal of Zootechnie,* I extract some recent points of general interest among which, first the symptomatology and again the anti-anaphylaxy proper.

The symptomatology is relatively complicated, differing according to the fact that the injection is made with pure (milk, white of egg) or with toxic albumins. In this last condition, to the ordinary symptomatic series of anaphylactic manifestation, are added other symptoms which vary according to the toxic principle in question.

In the anaphylaxy due to pure albumins, the organs principally affected are the nervous centres; and the symptoms accompanying these lesions may appear in two characteristic periods:

(1) One of *excitement* expressed by uneasiness, chronic muscular contractions, vomitings, frequent expulsions of urine and feces, marked acceleration of the respiration.

(2) One of *depression,* with somnolency, staggering, weakness of the pulse, which remains regular, coma, anuria, constipation. The temperature may remain normal, but it often drops below the average. This has been considered as accompanying the first apparition of the symptoms. Generally the reflexes remain, sometimes they are abolished.

Although these nervous symptoms do generally appear in the above regular manner, they may also frequently differ, and fatal result may occur in the full period of excitement or, again, in that of depression. There are, again, different forms of evolution in the symptoms, which were observed by Alexandrescu and Cinea, which permitted them to recognize four forms: (1) A *fulminant* form with severe dyspnea, cyanosis of the mucous membranes, enormous œdema of the udder, anal and vulvar mucous membranes, dropping of the animal with general contractions, abundant salivation, death in five or six minutes; (2) a *very severe* form of dyspnea, pulmonary œdema, salivary and lachrymal secretions abundant, stupid appearance for three-quarters of an hour, reduction of milk secretion for a week; (3) a *serious* form with severe prurigo of the muzzle, in the submaxillary space and lumbar region, impulsive tendency to move forward, urticaria; (4) a *benignant* form with loss of rumination, œdema of the anal and vulvar mucous membranes, cyanosis of the udder, urticaria.

With horses, these manifestations are exhibited by excessive nervous excitement, extensive urticaria or œdema of the neck and head.

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Considering the subject of antianaphylaxy, Mr. Pecherot gives a little consideration to the methods which have been prin-

cipally recommended by Besredka, of which I have already spoken as being used in Roumania, and he then speaks of the method advocated by Friedberger and Hartoch, consisting in venous injections of a very concentrated solution of sodium chloride, 2 grammes by kilogram of the animal, and to which they add calcium chloride in the proportion of 1 p. 100.

In the resort of serotherapy the means to employ to avoid anaphylactic accidents can be classed as direct and indirect. Among the former are those that act upon the serum, which have not given excellent results.

Carnot and Slavu advocate the addition of chlorhydric acid to the serum.

Heating to 56° C. is recommended by French preparators of serum.

Among the indirect means are those that act principally on the individual himself, either by the method of Besredka, that of F. Arloing, who recommends a rectal injection of the therapeutic serum, or, again, of that of a normal horse, done previous to the first manifestations of anaphylaxy.

In animals, anaphylaxy is treated by anæsthetics, narcotics in large doses, or specially alcohol.

When anaphylactic accidents are produced, during the application of serotherapy this must be immediately stopped or they will return with each injection more and more severe and appear nearer and nearer after the injection.

But finish Pecherot in his review: All these methods give excellent results with the anaphylaxy of laboratory. But no one has yet made its definite proof in clinics.

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In relation with this important subject, however, there has been published in the *Annales de l'Institute Pasteur* an article by A. Besredka, entitled "*Antianaphylaxy,* Treated by the Method of *Small Doses and Subintrant Injections,*" which is resumed by Panisset as follows:

After the attempts of vaccination against the serial anaphylaxy of guinea-pig by Rosenau, Anderson, Besredka, Steinhardt, which remained without result, Besredka has shown that one single injection of a small dose is sufficient to prevent the accidents produced by a dose surely fatal in an anaphylactized witness not submitted to antianaphylactic vaccination. For instance, on an anaphylactized guinea-pig by horse serum, inject under the skin 1/20th of c.c. of this same serum, dose fifty times inferior to a noeive one; from that moment he begins to be antianaphylactized; four hours after, a dose certainly fatal can be injected in its nervous centres or in the blood without manifestations of any kind. Small doses of serum injected under the skin (1/20th of c.c.) or in the peritoneum (1/50) act as true vaccination.

The immunity appears more rapidly (one to two hours) after an intraperitoneal vaccination than after the subcutaneous. It takes place immediately after an intravenous injection. The small dose of serum preserves only against one or two fatal doses; but the method is insufficient against the testing inoculation by the veins or also against massive doses of serum administered with therapeutic object. Then one must have recourse to subintrant vaccination. Instead of a small dose, two, three or four injections are made a few minutes apart, the dose being increased at each injection.

In this way an antianaphylactic condition of great power is created. To an anaphylactized animal a venous injection of 1/40th of c.c. of serum is made; five minutes later another of 1/10th of c.c.; two minutes later ¼ c.c. can be injected, and two minutes after 1 c.c. without danger.

In less than ten minutes one succeeds in vaccinating against twenty fatal doses. The method of subintrant vaccination can be applied to serial passive anaphylaxy. All species of animals and the most varied manifestations of anaphylaxy are justifiable of the method. Experiments have demonstrated that it prevents

the accidents of lactic anaphylaxy, and it can be applied not only to guinea-pigs but also to rabbit, goat, cattle, horse and dog.

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ANKYLOSTOMOSIS—ETIOLOGY.—Under the names of *Uncinariosis, Ankylostomiasis, Ankylostomosis* or *Pernicious anhemia* is described a disease which, in man as well as in ruminants and carnivorous, is manifested by morbid troubles, progressive anhemia, gastro-intestinal disorder, due to the presence in the small intestine of two parasite nematods, the *Ankylostomum Duodenal,* discovered in 1838 by A. Dubini, and the *Necator Americanus,* discovered by W. Stiles in 1902. Perroncito in 1880 had proved that the serious disease known as anhemia of the miners, anhemia of the tunnels, was due to the parasitism of ankylostoma, whose general evolution had been established by the works of Grassi and Parma, Perroncito, Leichternstern, Lambine and Loss.

Laid in the intestine, the egg of this parasite, although already provided with two, four, and even eight blastomers, develops only outside of the intestine, where in twenty-four hours a rhabditoid larva comes out, and is in a few days transformed into an encysted *strongyloid* larva that dessication kills in a few instants, but which may live for two or four months in a place sufficiently damp. Very resisting to most energetic antiseptics, which kills it only after a contact of several hours, this larvæ when once in the living organism undergoes other transformations and then becomes an adult male or female ankylostoma.

This parasite infesting the intestine in the stage of strongyloid larva, the question presents itself: How did it reach there?

Perroncito had admitted that it was through the mouth. Working miners in eating had absorbed the larvæ, which were deposited on their hands. Strongyloid larvæ being found in great number on the walls of the mine galleries, the infestation was thus possible. Or, again, by the drinking of water in which

eggs of ankylostoma had been. Fruits and vegetables watered with such water could also be a means of infestation per mouth. Flies were also accused of transporting the larvæ. But with all these explanations supporting more or less the theory of Perroncito as to the principal cause of the entrance of the parasites in the digestive canal, there remained many authors who did not accept the theory, and among them the principal was Loss, who considered as difficult to generalize it, because of several biological peculiarities of the larvæ, and in 1898 advanced the opinion that the infection was taking place through the skin.

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During that year, while manipulating cultures of larvæ, with the greatest care to avoid infesting himself per mouth, he *without attention* allowed a drop of a very rich culture to fall on his hand, and did not wipe it off immediately. Feeling, after a short while, itching quite violent at the place where the drop of culture had fallen, he scraped the surface of his epidermis, examined it with the microscope, and discovered the presence of a small number of larvæ and quite a quantity of empty larvæ sheaths. He concluded that the disencysted larvæ had penetrated his skin. Three months later he passed eggs of ankylostomas in his own feces. He then started series of experiments similar to the one he had on himself, on human beings and finally on dogs. The results were positive in all and authorized him to affirm the fact of the penetration of larvæ of ankylostomas by the skin.

The experiments on dogs were particularly demonstrative, as they allowed him, by killing the dogs at various times from the initial infestation, to watch the tract followed by the larvæ so as to reach the intestines.

Controlling experiments were thus carried out by other authors; with *Ankylostoma Duodenale* (Schaudinn, Herman, etc.). with *Mecator Americanus* (C. A. Smith), with *Anky-*

lostoma caninum (Loss, Calmette and Breton), all gave positive results and confirm the discovery of Loss.

Veterinarians may have heard of this new explanation of the presence of kind of epizootic outbreaks. Our classical works refer to it; Cadeac has mentioned it in the recent edition of his encyclopedia, and it is necessary to insist on the practical importance of the facts demonstrated by Loss. They have elucidated definitely the important question of the etiology of ankylostomosis, and gave proper directions for a rational prophylaxy of the disease, just as well for human patients as it will apply to animals.

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AUTO-INTOXICATION IN INTESTINAL OCCLUSION.—Prof. Roger, in the *Presse Medicale,* has published an article which I may be permitted to *resumé.*

Three theories have been advanced to explain the mechanism of death in intestinal occlusions: That of the *reflex,* in which the nervous system plays the principal part, the *intoxication* and the *infection.*

To-day it is the toxic theory which is most accepted; the obstacle prevents the expulsion of the products from the numerous microbian organisms of the intestines. But the clinical observations and the experiments of Roger and Garnier have proved that *death occurs so much more rapidly that the obstacle is situated higher.* Indeed, if one ligates the duodenum or the jejunum of a rabbit, he will live scarcely twenty-four hours. It will, however, live from thirty to forty hours when the ligature is on the ileum and from four to five days if on the rectum. In the first part of the small intestine, the microbes are relatively in small number; their true habitat is the cecum and it is there consequently that are elaborated in greater abundance the poisons, and a ligature on the rectum, stopping their expulsion, must bring on death rapidly. But, on the contrary, it is slow to take place and is much less rapid than when the

occlusion is duodenal; microbian toxises do not then seem to be the principal cause of death.

In 1906, Roger and Garnier advanced another theory, that of an *intoxication by the poison elaborated by the organism itself,* that is to say, a *true auto-intoxication.*

This theory has suggested other investigations and in particular those of Braun and Borutton, which do not accept the microbian, but advocate the reflex theory. Recently in 1910, Draper-Maury, who has made more than four hundred experiments on the question, has elaborated an important and interesting work. For him, when the occlusion is duodenal, death is due to an auto-intoxication by the substances produced or poured in that part of the intestine; while, when it is situated in the large intestine, it results from a toxi-infection, a microbian influence.

Draper-Maury has made on dogs a potential gastro-enterotomy fistula, that is, an anastomosis between the stomach and the intestine, with which, by placing a ligature on various parts of the portion of the intestine between the pylorus and the new artificial opening on the great curvature of the stomach and then experimenting on dogs, he proved that in the intestinal occlusion, phenomenas of auto-intoxication, in whose genesis the pancreas plays an active and important part; but still he admits equally the influence of the elaborated products of the duodenal and stomach as also that of some gastric and jejunal products. In criticising this, Prof. Roger adds that death cannot be considered as a consequence of the retention of the pancreatic juice, because the ligature of the canals of this gland allows a lapse of life of long duration.

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HERMOPHENYL.—This is a therapeutical agent introduced in medicine since 1901, where it soon reaches a first place among the usual antiseptics—compound of mercury, which is very sol-

uble in water; it possesses all the properties of the mercurial salts and has the advantage of not being toxic, not irritating for the tissues and not coagulating, albuminoid substances. It has been used recently in veterinary medicine and principally by army veterinarians. Lesbre, who writes: With bruised wounds—all of those which were treated were quite serious, existed in various regions, and many were deep and wide—it worked well. The treatment consisted in washing the wound with boiled water, drying it with wadding pads, and then coating the whole surface with a solution, 10 pr. .1000 of hermophenyl. The wound was then covered with a pad of aseptic wadding. The dressing renewed according to indications two or three times a day. In wounds where there were sutures, a cicatrization by first intention was often obtained with serious wounds of the head. The recovery of some wounds may demand several weeks, but the inflammatory symptoms are always mild and hermophenyl dries the suppuration and prevents all accident of intoxication and hydrogyrism.

In fistulous wounds, hermophenyl injected in 10 pr. .1000 solution is followed in a short time with cicatrization of these wounds which had been rebellious to oxygenated water, tincture of iodine and other antiseptics. In punctured wounds of the foot, many cases treated by the introduction of hermophenyl in powder or as a pencil and the wound covered with a pad of aseptic nature, have given most remarkable results. The animals having never shown any of the great pain manifested by the use of sublimate, which closes the fistula and prevents the escape of pus. Hermophenyl has over the sublimate the advantage of not coagulating the albuminoids, of not acting as a caustic nor a toxic, and can be used in a proportion ten times stronger than sublimate, thus having a much greater antiseptic power.

Easy of use, certain in its action, it is a powerful antiseptic that recommends itself in *veterinary therapeutics*.

OCCULT EXPERIMENTAL MESENTERIC TUBERCULOSIS.—Mr. Chaussé, Sanitary Inspector, has been making for some time experiments on tuberculosis. A few months ago he presented to the Academy of Sciences an article where he stated that, when submitted to injections of natural products or very virulent cultures of tuberculosis, dogs would contract an occult mesenteric tuberculosis and remain in that condition for at least six months.

And then the question presented itself: What would become of this latest infection? Would it develop into an abdominally manifested affection, or towards a thoracic tuberculosis, apparently primitive, as would be claimed by the advocates of the digestive origin of tuberculosis; or, again, would the dogs recover by resorption of the pathogenous agents? The solution of this question, very interesting as far as the pathogeny of the human and animal tuberculosis, by injection, suggested to Mr. Chaussé other experiments.

First, he demonstrated that dogs would contract mesenteric tuberculosis easier than he first suspected and be infected with small doses of human or bovine bacilli.

As far as the question of what becomes of that infection, he experimented upon twenty-three dogs which gave him constant results and brought him to the following conclusions:

1. Dogs do contract by ingestion, even with small doses, an occult mesenteric tuberculosis which is detected by inoculation to guinea-pig up from the 150th to the 180th day.

2. In normal conditions the tuberculous bacilli which reaches the mesenteric glands are absorbed in the organism, and this resorption takes place in a lapse of time varying between 80 and 200 days to the maximum.

3. This occult digestive tuberculosis does not, in a physiological condition, give rise to an apparently primitive thoracic infection nor to any other specific localization of similar nature.

Being admitted that the organic reactions of dogs towards the tuberculous virus are *identical* to those of man, it appears probable that these conclusions may apply also entirely to him.

It is certainly a very important fact to consider besides that which has its value in relation with the digestive infection of tuberculosis.

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BIBLIOGRAPHIC ITEMS.—Announcements (?) of colleges, catalogues, bulletins and reports of yearly work have come to me lately for the closing session of 1910-1911. Among them I recall principally the report of the Legislature at Albany of the New York State Veterinary College. It covered over 200 pages and, besides the report of the Director, V. A. Moore, and those relating to consulting, medical ambulatory and small animal clinics, it contains very interesting papers of special work done at the college or in other particular relations which by themselves show that the gentlemen belonging to the faculty of this institution are doing good work in behalf of the profession. For those who desire special information, they may refer with great advantage to the report of Director Moore. Among the subjects treated are to be found: "The Elimination of Tubercle Bacilli from Infected Cattle and the Control of Bovine Tuberculosis and Infected Milk"; "Some Methods Employed in Northern Europe to Control Bovine Tuberculosis," both by Director Moore. "The Elimination of Tubercle Bacilli," by Prof. Elmer G. Peterson. "The Granular Venereal Disease, Abortion and Sterility of Cows," by Prof. Williams. "Hog Cholera and Anti-Cholera Serum," by H. J. Kilks. "Fatal Septicemia in Young Chickens," etc. Those are followed by others from Profs. Fish, Welch, Burnett, Udall and Sunderville.

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THE *Agricultural Journal of the Union of South Africa*, which is issued monthly by the Department of Agriculture at Pretoria, in the May number publishes from Dr. Theiler a revised (second) edition of his previous article on diseases, "Ticks and Their Eradication," brought up to date. This article had

already appeared for general information, but the question has made such progress that it was considered necessary to issue a revised edition to give an opportunity to those who are specially interested to be well informed. The article, although it is principally for lay readers, is nevertheless very valuable to all those who wish information relating to these prevailing diseases of South Africa. A concise consideration of biliary fever of horses, redwater in cattle, gall sickness in cattle, of the fevers caused by *Piroplasma mutans, Spirochaetes,* the East Coast fever, heartwater in cattle, sheep and goats, is given and followed by the life history of the ticks; the blue, the bont leg, the red, the brown, etc., with their scientific names alongside. The hosts of the ticks are mentioned as follows: "The blue tick has been found in equines, cattle, sheep, goats, dogs and antelopes. The red tick on equines, cattle, sheep and goats, the reed buck, other antelopes, and the Cape hare. The brown tick on cattle, equines, sheep and goats, dogs, antelopes, Cape hare and lion. The black pitted tick on cattle, horses, sheep, goats, dogs, wild hogs, jackal, bush pig and hedgehog. The bont tick on cattle, horses, sheep and goats, dogs, wild hog, antelopes and ostrich."

For the eradication of ticks and, of course, of the disease they transmit, the various ways are considered: the burning of the grass, dipping, starving of the ticks. All this information, where strictly scientific phraseology seems to be absent, are of most valuable interest to breeders, raisers; and this kind of propaganda is of great importance for the wealth of South African agriculture.

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Acknowledgment is given of:

Annual Report of the Chief of the Cattle Board of Agriculture of Massachusetts.

Lecture on "Bacteriology in General Education," by Dr. V. A. Moore, delivered before the Society of American Bacteriologists.

The *Lawrence Telegram,* with lecture from Dr. J. F. Winchester on "Tuberculosis."

"Studies on the Biology of the Texas Fever." Bureau of Animal Industry, Bulletin No. 130. By H. W. Graybill.

Cornell Veterinarian, June, 1911. *Veterinary Notes,* June, 1911. *Chicago Veterinary College Quarterly Bulletin.*

A. L.

THE TORONTO MEETING.

As the REVIEW goes to press, the great A. V. M. A. meeting at Toronto has passed into history; history that tells of important accomplishments for veterinary progress in America. About seven hundred enthusiastic veterinarians, from all parts of the United States and Canada, who had thronged into the great city of Toronto, wrestled earnestly and persistently with the educational problems so close to the heart of President Glover, and discussed scientific matters, during the entire week. For, although the meeting proper, opened its session on Tuesday morning, August 22, the Association of Faculties and Examining Boards, and the Executive Committee, were already hard at work on Monday, August 21. A full and detailed report of this great meeting will be published, as has been customary, in the October issue of the REVIEW, but we have taken advantage of a little space in our present number, just as we are closing our forms, to give to those of our readers who were not fortunate enough to be present, a brief outline of what transpired.

The important accomplishments for veterinary progress referred to above, consist of a lengthening of the college courses to four years of six months each (or three years of nine months each), beginning with 1913, and one year's high school work or its equivalent in 1914-15, and two year's high school work or equivalent, in 1918-19, as an entrance requirement in order for graduates to be eligible to membership in the American Veterinary Medical Association. This will make for a uniform standard of matriculation requirements and uniform course, and pave the way for a uniform degree in veterinary medicine; as no school in America can afford to disregard so powerful a body as the na-

tional association, at whose doors more than two hundred applicants knocked for admission during the recent convention.

The election of officers, as at San Francisco, was eminently satisfactory, the office seeking the man, and not the man the office; and we feel sure that veterinarians throughout the entire country will rejoice in the election of Dr. S. Brenton, of Detroit, as president. Drs. C. J. Marshall, of Philadelphia, and George R. White, of Nashville, were re-elected to the offices of secretary and treasurer, respectively.

The strain of a strenuous day in the convention halls was relaxed by a moonlight sail on Lake Ontario, on Wednesday evening, in the beautiful steamer "Cayuga," by courtesy of the Mayor of Toronto, where some recuperated by reclining in easy chairs and others found relaxation in "tripping the light fantastic;" and on the following day the three hundred ladies that honored the convention with their presence enjoyed the sights of Toronto, and were honored by an invitation to a four-in-hand drive behind the famous prize-winning horses of Sir Henry Pellett, followed by a visit to his gardens at Casa Loma, on Walmar road, where Lady Pellett served them with tea, and they were treated to a miniature horse show, the horses exhibited comprising some of the recognized champions of the continent, including Sir Henry's latest addition to his stables, "Indian Chief," the champion heavyweight saddle horse of America. Many veterinarians absented themselves from the session and repaired to Sir Henry Pellett's stables, where they met the ladies returning from their drive and shared with them the exhibition of equine aristocracy and inspected the palatial stables that housed them.

Thursday evening found between two hundred and seventy-five and three hundred ladies and gentlemen around the festive board, banqueting at the famous "McConkey's," on Yorke street; and the meeting was brought to a close by a rousing clinic on Friday afternoon, after which a large party of veterinarians and their ladies embarked on the palatial steamer "Toronto" (Montreal Line, Lake and Thousand Islands Division), for Montreal, Quebec and other places, before returning to their homes.

ORIGINAL ARTICLES.

DISTEMPER OF THE DOG.

By Prof. J. J. L. Heldring, M.D.C., Therapeutist, Department of Veterinary Science, Washington State College, Pullman, Wash.

In treating of canine distemper our every effort should be directed toward attaining a practical end. I therefore, at the outset, request that an essentially practical attitude be adopted toward the dogmas herein set forth. If, for instance, the suggestion is made that in the treatment of epileptiform fits, not uncommon in distemper, the practitioner, for the purpose of removing such of the teeth as might give rise to trouble, should look to the dog's mouth—please bear in mind that crowding teeth have absolutely nothing in common with distemper, but reason out for yourself that they may at any time develop a selective affinity for the peripheral endings of an afferent nerve, which may in that manner be induced to carry a painful impression to the central nervous system, upsetting the same at a psychological moment best calculated to throw an ailing dog into "whooping fits."

The term "distemper" is an old one, dating far back into antiquity. At one time it was the common goat for almost any disease, human or bestial, the popular mind saw fit to immortalize. At this writing it has become the exclusive property of the veterinary profession, where, owing to its magic charm, its mysterious subtlety, and its obscure origin, it still forms the bond of scientific contention.

Distemper as a canine disease made its first appearance in Europe shortly after the discovery of America. It was presumably introduced into Spain from Peru by some returning conquerors. In 1740 we learn of its presence in France; in

1760 in England; 1770 in Russia; and now, like rabies, it has become a thoroughly cosmopolitan malady.

GENERALIZATION.—As a contagious disease, distemper appears to be freely intercommunicable among the dog, cat, fox, wolf and hyena tribes of the carnivorous kingdom. Among our domestic representatives of this division we find well-bred animals to be seemingly less resistant to its ravages than are mongrels. Seldom, indeed, does a registered hunting dog escape from its clutches with his olfactory sense fully preserved. With regard to the nature of the contagion, although the specific virus has not as yet been isolated, scientific experiments have pretty well established it to be both fixed and volatile in character. This, in part, accounts for the large number of ostensibly sporadic cases that annually present themselves for treatment. One other fact that forces itself upon our attention is, that canine distemper—although, like infantile paralysis among the human family, it may manifest itself at any period of life—usually singles out puppies somewhere between the ages of eight weeks and as many months. The disease appears to be essentially a catarrhal phlegmania, involving the ocular, respiratory and digestive mucous membranes, either individually or *en masse*. Frequently, also, it is accompanied by grave nervous disturbances, and practically always by a characteristic cutaneous exanthema. These diversified manifestations of one and the same disease have led me from practical motives to consider the various forms in which the disease appears, according to symptoms as they predominate.

Among the early symptoms, more or less prevalent in all forms of distemper, should be mentioned dullness and loss of appetite, followed by chills, dry hot nose with rise in temperature, and in the course of two or three days one or more of the specific forms.

I. THE RESPIRATORY FORM.—As a rule at first only the upper air-passages are affected. There is marked nasal catarrh, accompanied by pruritis, which induces the animal constantly to rub its nose, while a muco-purulent discharge, at times bloody

in character, exudes from both nostrils. There is also a pronounced overflow of tears, accompanied by a troublesome conjunctivitis, in which the eyelids become encrusted and glued together. Simultaneously with this we may observe a very painful laryngitis and pharyngitis, during which there will be noticed difficult deglutition and a dry, harsh cough.

Treatment.—The principles governing the treatment of distemper being palliative rather than specifically curative, it is always well at this stage of the disease to subject the patient to such antiseptic fomentations and inhalations (oil of eucalyptus), as will prove most soothing to the painfully inflamed mucous membranes of the nose and throat. An alkaline gargle like chlorate of potash, or a rubifacient liniment applied over the region of the throat, is likewise recommended, as are also boric acid lotions for the eyes; and finally, before dismissing the subject, permit me to repeat a time-worn, though never to be omitted caution: "Keep the bowels open! Give calomel!"

Should the disease gravitate, or, if you prefer, "radiate," from the larynx to the bronchii, the constitutional symptoms will at once become aggravated. Your eye will detect an increased number of respirations, while auscultation will reveal a coarse, vesicular murmur, accompanied by mucous rales in the chest. Furthermore, the dry, harsh, vigorous cough of laryngitis has vanished and given place to a weak, painful, husky, pulmonary cough audible whenever the animal shifts its position. Fear or weakness on the part of the sufferer often allay expectoration, with the common result that the infected exudate, at each inspiration, is drawn deeper into the alveoli, thus giving rise to catarrhal pneumonia.

Treatment in the Bronchial Form.—By all means administer stimulant expectorants—ammon. carbonate, for example—or, if you prefer, such of the expectorant group as will excite a greater output of bronchial secretions, *i. e.*, tartar emetic or ipecac. These last named, being also emetics, exert likewise a mechanical effect through violent, spasmodic contractions of the diaphragm, bodily removing any exudate lodged in the upper

bronchial air passages or trachea. Meanwhile continue your eucalyptus inhalations, and don't be tardy about applying a mustard blister to the chest walls.

(C) As has been said, delayed expectoration may give rise to catarrhal pneumonia. Marked dispnœa now arises, the erstwhile loud vesicular murmur disappears, and zones of dullness take its place. This last-named feature, however, is not always present, largely depending for its more or less pronounced distinctness upon a greater or lesser area of healthy lung tissue still intervening between the field of auscultation and the seat of the trouble. As the disease progresses the exudate becomes offensive, so that frequently toward the end a fetid odor emanates from the breath.

Treatment.—When the exudate commences to solidify, remedies tending toward absorption of the same should be administered. Foremost among these should be mentioned iodide of potash, the great lymphatic deobstruent and resolvent. Other alternatives also may now be pressed into service. Echinacea, for instance, combining in itself the valuable properties of a cardiac stimulant, internal antiseptic, all around febrifuge, and diuretic, must be allotted a prominent place.

II. The Nervous Form.—This second series of manifestations is due to the presence, within the circulation, of the same septic materials or disease products, causative of canine distemper in its simpler forms. Blood heavily charged with toxins forces its way to the higher nerve centres, attacks them, pollutes them, and degenerates them, in case of so-called recovery, not infrequently leaving the animal palsied or subject to fits during life. In the constitutionally weak, symptoms of depression and stupefaction are early manifested; in the strong, at first delirium and rabiform manifestations, followed by profound stupor, are the rule. In either case spasmodic muscular contractions and convulsions due to central irritation are by no means uncommon. At times, also, affected animals will be observed to wander aimlessly about, with staggering gait and head carried backward, or stiffly to one side—the result of meningitis.

Impaired vision, likewise, not uncommonly accompanies this nervous type of distemper, while permanent loss of smell or persistent chorea form by far too ordinary a sequel to require separate comment.

Treatment.—Nervous manifestations in distemper must be always regarded with grave apprehension, while its course and progress, under these conditions, varies so much in individuals that our treatment must of necessity conform itself to circumstances. First of all, look to the teeth and remove such of them as may give rise to trouble. This done, devote your energy to the treatment of symptoms in the order they arise. In the early stages endeavor to divert the blood from the central nervous system to the periphery. This may be accomplished by means of saline purges, bleeding, blistering the region of the spine from occiput to croup, massage, electricity and various other branches of mechano-therapy. Meanwhile restricted exercise, port wine, and constitutional tonics and alteratives like Donovan's solution of arsenic, may be regarded as rational therapeutics, and finally, avoid all excitement and at night induce sleep if necessary by means of bromides.

III. GASTRO-INTESTINAL FORM.—Students as a whole are apt to place the wrong interpretation upon the language of their textbooks. Thus I distinctly remember for years after graduating, to have labored under the mistaken impression that the grave digestive phenomena often accompanying the abdominal form of distemper were due essentially to a "rational and concerted effort," on the part of all vital functions in the animal economy, to rid the system of an infection. Had I correctly interpreted my authority, I should have read "misdirected effort" instead; yet as matters now stood I could not but continue groping in the dark. "The attempted cure is worse than the disease" I argued. "Morbid matter is thrown off in the stools, our scientists assert."

Very well, but what about the resulting gastro-enteritis? What about the oft irreparable dyspepsia, the annihilated power of intestinal absorption? What about the necrotic mucous mem-

brane sloughing away in strips, leaving the denuded intestinal canal raw and hemorrhagic? What about the progressive dysentery which saps the animal's every vital force, until nothing of him remains but a moth-eaten pelt and a bundle of marrowless bones? Are we to accept all this as conclusive evidence of nature's power to remedy her own ills? That much for a puerile point of view! The whole of this vitriolic outburst has long since been relegated to the scrap-heap, duly identified as the idle vaporings of a mind overstocked with ill-digested material.

Treatment.—This confession properly disposed of, it now only remains for me to admit that I have since become a disciple of those practitioners who assume a sort of *laissez faire* attitude toward specific diseases in general. To be brief, then, with regard to the condition now under discussion, this is our motto: Modify your diarrhœa, but don't check it. Protect your bleeding intestines, but maintain peristalsis. Tone up your relaxed intestinal walls, but avoid undue irritation. In other words, administer antacids to correct your acrid secretions, bismuth and demulcents to protect your hemorrhagic mucous membrane, sulphate of copper to tone up your flabby intestinal walls, and, above all, both before it reaches the digestive tract and afterwards, checkmate your virus. Give echcifolta to play the part of an intestinal and general antiseptic, and constitutional alterative.

General Therapeutics.—Having now in detail covered our ground more completely, perhaps, than a specific disease—which, after all, must run its course—would warrant, we next come to a branch of therapeutics of far greater importance than is generally conceded: Nursing! But before entering upon this final dissertation, we are in duty bound to take cognizance of its chief ally—the exanthematous integument. The bowels, as we have elsewhere noted, do not afford an altogether safe and sane outlet to excretions. The skin, however, at the very time when the kidneys, lungs and other viscera are being taxed most sorely by the ever-swelling tide of waste products demanding an outlet, may suddenly manifest a most unwonted activity; may

answer nature's call for assistance; may open wide the semi-inactive sewage gates of the periphery; may point a safe exit to the accumulated poisons within, and all this at a crucial moment when nothing but physical shipwreck seems in store for the stricken patient.

Some years ago, when called upon to treat a rather troublesome eczema in an asthmatic pug dog, slightly superannuated, I became favorably impressed with the foregoing type of reasoning. The skin lesion, indeed, most readily yielded to the typical effects of a mildly astringent lotion, but in its stead arose a most alarming form of dyspnœa, apparently of asthmatic origin. It is evident, then, that we had jumped from the frying-pan into the fire; and, what is more, there we remained until suddenly, at the expiration of perhaps a week, the eczema broke out afresh, whereupon, very gradually the graver respiratory phenomena fell back to their normal asthmatic level. Not suspecting any connection between the two disorders I once more resorted to the astringent body-wash. Same results! The eczema quickly responded to treatment, the asthmatic manifestations became aggravated tenfold; nor was this all. The animal repeatedly thereafter was subjected to the identical experiment, and it never failed to respond to the test. Eczema at high tide, asthma at low ebb, and vice versa. Such was the rule. Some time afterwards, treatment meanwhile having been discontinued, the animal made what might be termed a spontaneous recovery. What, then, are we to conclude? That occasionally in such disorders nature avails herself of the skin as a safe means to eliminate from the system its most injurious products. Also, that in case this comparatively harmless channel of elimination becomes blocked, a more dangerous route is commonly chosen. usually revealing itself in an aggravation of systemic disturbances. In view of this our firm conviction, we are led to believe, therefore, that in various diseases, including canine distemper, to favor excretion of effete material by the skin constitutes rational treatment. A treatment, moreover, which may prove of marked prophylactic value in our war against chorea, or any

of the more common sequelæ that follow in the wake of distemper.

Treatment.—Never sanction the use of astringent lotions, or other preparations of a dessicant nature. But rather, by means of aseptic needles, liberate the contents of the cutaneous pustules that accompany practically all forms of distemper. Also, by means of mildly antiseptic oils or similarly medicated lanolin, render the integument more highly plyable, in this manner facilitating the removal of morbific matter by the skin. And once again, never lose sight of the fact that in canine distemper in its various phases the cutaneous route may prove nature's short cut to health.

NURSING.—Though fresh air forms the mainspring of this all-important branch of therapeutics, it must first and last be understood that "exposure" constitutes no part of the doctrine. Keep the animal in well-ventilated, cool, dry quarters, away from all draught. Also, when, as is often desirable during convalescence, the patient is taken out for exercise, clothe him warmly, if possible in flannels. With regard to diet, always bear in mind that in order that a dog may live, rather than to have him suffer a relapse in the form of an intestinal hemorrhage or intussuscepted gut, it becomes necessary at times to ignore his craving for food. Tempt his appetite, which is often capricious enough, but when once established fail to gratify it. In the intestinal form especially, all solid food should be withheld. Instead, it were better to give liberal quantities of barley water or other demulcent beverage, supplemented occasionally with beef tea or sour milk. The crisis once passed, fresh boiled vegetables may be offered, or finely chopped meat—in short, in moderation anything that may suggest itself to the common-sense mind. And in conclusion permit me, at the risk of becoming tiresome, once more to sound the keynote of this treatise: "The disease being highly contagious, rigidly enforce your quarantine!"

This paper was prepared for the Junior and Freshman Veterinary Association. No claim of originality is made. Everything has been sacrificed to clearness.

STRANGLES AND ITS TREATMENT.*

By A. G. Wadleigh, D.V.S., La Junta, Colo.

Strangles was among the first of equine diseases to be recognized. In 1664, Solleysel gives an account of it and points to the fact that it had been known for a long time. Its infectious nature was determined experimentally by Lafosse in 1790, and since that time by a number of other investigators. It has been thought by some to be identical with scrofula and measles. Sacco and Nasbot considered it as horse-pox.

Strangles is an infectious disease of horses and mules, occuring both sporadically and epizootically. It is characterized usually by a fever followed by an acute catarrh of the upper air passages and a suppurative inflammation of the surrounding lymph glands.

It is a widespread disease among horses and seems to exist in all countries where horses are raised and to be more prevalent in breeding districts than elsewhere. It appears to stand in equine pathology very much as measles do in human medicine—a disease of early life, and consequently more prevalent where there are more young.

Etiology.—The *specific* cause or strangles is the streptococcus equi, a chain-forming organism, first described by Schutz in 1888. With pure cultures, he produced the disease in healthy horses. These streptococci can easily be found in cover-glass preparations of the pus from lymph glands after staining with aniline dyes. According to one authority, when pure cultures are inoculated in horses they produce abscesses in the site of

* Read before the semi-annual meeting Colorado State Veterinary Medical Association, June 2 and 3, 1911, Ft. Collins, Colorado.

inoculation, and strangles when introduced into the nasal cavity. Inoculation with the virus is fatal to mice.

Among *predisposing* causes, youth is probably first, for susceptibility to the disease is inversely proportionate to the age of the animal. As other predisposing causes we may mention chills, catarrhal affections of mucous membranes, bad climatic conditions, over-exertion and transporting over long distances.

The period of incubation varies from four to eight days.

SYMPTOMS—(*a*) *General.* The first indication of this disease is a rise of temperature to from 104° to 105.5°, which usually declines one or two degrees in about forty-eight hours and does not rise again until there is suppuration of the lymph glands. The temperature decreases simultaneously with the outward discharge of pus. When there is a pyæmic condition and absorption of toxins the temperature remains high longer. There is a loss of appetite, occasional coughing, depression, and often great weakness. The pulse usually remains about normal throughout the disease except in animals having a weak constitution.

(*b*) *Local.* As *local* symptoms, we find catarrh of the nasal mucosa, enlargement of submaxillary and pharyngeal lymph glands, a nasal discharge from one or both nostrils which is at first serous and somewhat viscid, but later becomes purulent and yellowish green in color.

The catarrhal condition may extend to the pharynx, larynx, trachea and even to the bronchi. In most cases swelling of the submaxillary glands appears concurrently with the purulent nasal catarrh. Very extensive swellings often develop from the submaxillary glands that may occupy the entire intermaxillary space and even spread to the outer side of the maxilla.

Abscesses form in most cases, but we may sometimes have absorption or induration. In exceptional cases strangles may present catarrhal symptoms without suppuration of lymph glands.

Occasionally one or both guttural pouches contain a large amount of pus. This condition is easily recognized by enlarge-

ment in that region and by the difficult breathing produced by the pressure on the trachea. Sometimes strangles is accompanied by a cutaneous exanthema which takes the form of an eruption of nodules, vessicles, or even pustules which may appear or disappear quite suddenly. An eruption of vessicles may also break on the nasal mucosa.

PATHOLOGY.—The pathology of strangles is quite interesting from the fact that in the beginning the disease is general, but later in its course it becomes a series of localized morbid foci, exceedingly variable in different individuals.

The contagium is absorbed chiefly through the respiratory mucous membranes. It is also thought to enter the body through the intestinal mucosa and open wounds or abrasions in the skin.

The lesions in most cases are characterized by an acute inflammatory process followed by suppuration.

The lymph glands seem to suffer most, but any organ in the body may be involved.

The glandular swellings about the head usually suppurate, the pus discharging either externally or into the oral cavity. Small abscesses often occur under the pharyngeal mucosa. The inflammation may extend to the superficial lymph vessels of the skin, especially of the head, resulting in the formation of a large number of small abscesses. Metastasis seems to take place through both lymph and blood vessels, although the lymph glands are most often affected. Suppurative foci have been found in nearly every lymph gland in the body.

COMPLICATIONS.—Chronic conditions may result, such as pharyngitis, laryngitis, catarrh of sinuses of the head. Also pyæmia and secondary infections. The discharge of pus from glands in the pleural or peritoneal cavities may give rise to a fatal pleuritis or peritonitis. Acute lymphangitis has also been observed as a sequel. One attack is supposed to produce immunity for at least two years and often for the remainder of the animal's life. However, I have seen the disease recur several consecutive years in the same animals.

The *duration* of the disease varies, according to its severity and the localization of the lesions, from a few days to several weeks and sometimes even months.

The *prognosis,* however, is favorable, as the mortality does not exceed three per cent. Death is usually caused by septicæmia, toxæmia, pleuritis, peritonitis, suffocation or metastatic pneumonia.

DIFFERENTIAL DIAGNOSIS.—Strangles should be differentiated from purulent nasal catarrh, glanders, parotiditis, pharyngitis, and pyogenic abscesses. These may be differentiated largely by the history and by careful examination.

TREATMENT varies with the severity of the disease. For convenience sake, I will classify it as follows: (1) nursing, (2) drugs, (3) surgery, (4) vaccination.

NURSING includes all care of the animal in regard to food, drink and general surroundings. The food should be of soft nature, such as bran mashes, silage and green food. Water should not be too cold or given in very large quantities. The animal should be kept blanketed at least during the fever stages, and general hygienic principles should be observed during the entire course.

DRUGS.—Medical aid consists chiefly in the application of poultices over suppurating lymph glands, and counter irritants over the region of the pharynx. Also the administration of volatile oils by inhalation and a mild cathartic with intestinal antiseptics given per orem. Febrifuges are seldom needed, but may be indicated when there is excessive fever for several days. In severe cases I often use a dram each of calomel, tincture of aconite, and nux vomica, given in a drench two or three times daily. Also inhalations of oil of tar or eucalyptus, and if there is much pharyngitis or laryngitis, I use a mustard plaster or a stimulating liniment externally.

SURGERY.—All suppurating lymph glands should be opened freely as soon as pus can be detected and abscess cavities syringed out with a strong antiseptic. The guttural pouches sometimes contain a large amount of pus, producing pressure on

the trachea, and usually require opening. Tracheotomy may have to be resorted to in case of excessive dyspnœa.

VACCINATION.—I have not fully satisfied myself as yet as to the real value of vaccine as a curative agent, but I certainly believe that it builds up an animal's resistance against the disease, and many complications have undoubtedly been avoided by proper vaccination during the course of the disease in conjunction with other treatment.

I give 1 c.c. the first dose and repeat the dose every twenty-four or forty-eight hours, gradually increasing the dose to 2 c.c. for yearling colts and 3 c.c. for older animals. I have obtained excellent results from giving one large dose to cases of long standing. Influenza antitoxin has been recommended by some as a curative agent in strangles, but I have never tried it.

PROPHYLAXIS.—This consists in isolation, disinfection and vaccination. Where the disease is quite prevalent the latter is the best means of protection. To give you an idea of the nature of the outbreak we have had to deal with, I submit these figures, which only include the time since January 1, 1911: Number of different cases called to treat, 38; number of cases died from complications, 5; number of guttural pouch operations, 8; number of developed pyæmic condition, 7. Animals develop the disease at all ages, from one week to twelve years of age. The disease has been prevalent in one district for over two years continuously.

In spite of the severity of the disease I have been able to prevent it in at least a majority of cases by a single vaccination. I seldom vaccinate an animal over six or seven years of age.

Out of twenty-six animals vaccinated, all of which were on infected premises, only six developed the disease and those only in a light form. Out of ten animals vaccinated, none of which had been exposed to the disease but all were exposed later, two developed a light form.

Four colts, varying in age from two months to two years, were vaccinated twice, doubling the dose the second vaccination, which was given four days after the first. None of them

showed any signs of the disease whatever. I am anxious to test this method more extensively.

All vaccine used was prepared by Dr. Kaupp in the state college laboratory. I give the following doses: For colts under six months of age, ½ c.c.; for colts between six months and two years, 1 c.c., and older animals from 1 to 2 c.c.

Many stockmen are coming to realize that vaccination against strangles is a good investment, and I believe that serum therapy in this disease has a great future before it. Records of three cases follow:

CASE No. 1.—Bay gelding, three years old. First temperature taken, third day, 105.2°; gave 1 dr. each of calomel, aconite and nux vomica. Temperature, fourth day, 103.6°; fifth day, 104.2°; sixth day, 104.0°; gave 1 c.c. vaccine. Temperature, eighth day, 104.4°; gave 2 c.c. vaccine. Temperature, tenth day, 104.6°; applied antiphlogistin poultice over submaxillary glands. Temperature, eleventh day, 102.6°; twelfth day, 102.2°; fourteenth day, 104.8°; opened submaxillary glands, found small quantity of pus. Temperature, fifteenth day, 102.0°; sixteenth day, 101.0°; seventeenth day, 100°. Animal was greatly depressed throughout course but ate soft food regularly. some pharyngitis and coughing but no difficulty in breathing.

CASE No. 2.—Five-year-old mare with colt at side. Colt also had strangles. Called to see case sixth day. Found acute pharyngitis and laryngitis, with very difficult breathing. Temperature, 104.2°. Gave inhalations of oil of tar and drenches of alcohol and calomel; also mustard plaster over pharynx. Temperature, seventh day, 103.0°; breathing easier; continued same treatment. Temperature, ninth day, 102.0°; eleventh day, 103.2°; breathing harder, and considerable swelling in pharyngeal region. Temperature, twelfth day, 103.4°; opened right guttural pouch; obtained large amount of pus. Temperature, fourteenth day, 101.3°; still considerable pharyngitis; gave calomel, nux vomica and aconite twice daily and animal made nice recovery in two or three days.

CASE No. 3.—Mare, two years old. Had shown symptoms for several days before I was called. Owner said animal was staggering. I found a temperature of 103.4° and very mild symptoms otherwise, except numerous small abscesses along lymph chains in all four legs which produced a stiff gait. Gave 1 c.c. vaccine and mild physic. Second day gave 1 c.c. vaccine; temperature, 102.0°. Third day gave 1 c.c. vaccine; temperature, 100.6°. Animal appeared normal for about six days, when the owner found her down and unable to rise. I was called immediately, but animal died before I could reach her. Autopsy revealed no large abscesses, but slight suppuration of mesenteric and lymph glands in all the legs. Death might have been due to septicæmia or an abscess in the brain or cord. (?)

DO NOT forget the dates of the New York State Veterinary Medical Society, September 12, 13 and 14, in Brooklyn.

STILL enthusiastic over the REVIEW after thirty years acquaintance: "Enclosed please find check for the REVIEW. I have been taking the REVIEW for about thirty years and find it a welcome monthly visitor. Yours sincerely, C. Horseman."

THE UNITED STATES LIVE STOCK SANITARY ASSOCIATION will hold its fifteenth annual meeting in Chicago, December 5th and 6th. Prof. Fergusen, secretary of the association in a recent communication says: "Membership of the association is now greater than ever before. The Fourteenth Annual Report has had a wider distribution than any previous report and the members of the association are taking a splendid interest in its affairs. The co-operation of every one interested in live stock sanitary control work is desired so that our next annual convention may be the best attended and most profitable ever held. Several topics have already been chosen for the program and suggestions are now asked for additional topics." We urge veterinarians to attend and participate in the meetings of this broad association whenever it is possible for them to do so. Anyone desiring to contribute to the program should address Prof. J. J. Fergusen, Union Stock Yards, Chicago, Ill.

AZOTURIA.*

By Dr. Reuben Hilty, Bluffton, Ohio.

In casting about for a definition of azoturia, I think that the one given by Prof. Law comes nearer to being a real definition of azoturia than any other given by the various other authors.

He says azoturia is an acute auto poisoning occurring in plethoric horses on being subjected to active exertion after a period of idleness and manifested by great nervous excitement and prostration, paresis beginning (usually) with the hind limbs and the passage of hemoglobin into the urine.

This most unwelcome disease has for years and years baffled the most ardent attempts of our profession, and the more research we make and the more we study the nature and causes of this disease, the more we are made to believe that it will continue to be a menace to the practitioner of veterinary medicine.

I have often heard the remark made that we should some time be able to treat azoturia as easily as we now treat parturient paresis, but anyone making this remark does not stop to consider the great amount of tissue destruction in azoturia, especially of the blood. "But," says the man who thinks we should find a specific remedy for azoturia, "this horse was in the best of health and condition just a very short while previous to having been stricken." I will admit that this is true, but may not Mr. A start down Neil avenue with his new $10,000 auto in the best of repair and still be completely wrecked before reaching the State House, not knowing that his colored chauffeur had for several days been storing nitro-glycerine beneath the

* Read before the Ohio State Veterinary Medical Association, January, 1911.

rear seat? While we are not storing nitro-glycerine in the horse, still, something almost as deadly to him as nitro-glycerine was to the automobile. So, notwithstanding the assertion of some that they have a specific in adrenaline and what not, we still expect to be more or less worried and annoyed by this disease.

Studying the nature and cause of the disease, we find that a period of rest is a constant precursor of an attack. Not a long period of rest, but a short period of two or three days up to seven or eight days. During longer periods of idleness the system adapts itself to handling the products of digestion. Another prerequisite is that the horse must be in good muscular condition and possess a vigorous appetite and a good digestion. The short period of rest interrupts the disposal of the products of digestion and tends to overload the blood with proteids.

Azoturia attacks the horse that is fed freely on a strongly nitrogenous diet. The blood becoming abnormally rich in albuminoids as it does during this short period of rest is, in my mind, one of the important factors in the production of azoturia. Again, the fermentation of large amounts of food in the alimentary canal tends to form toxic products, which, together with the toxic products of digestion in the blood, are, in our minds, the principal cause of the paralysis so constant.

These foregoing in themselves, however, are insufficient to cause azoturia. We must have an active exertion which causes the stored-up albuminoids to be thrown so rapidly into the circulation.

It is estimated that the healthy liver contains about one-fourth of the entire quantity of blood. The torpid liver of the vigorous, well-conditioned horse during this period of rest on rich feed, therefore, must contain much more than this percentage of the blood.

The spleen, which is always engorged after meals, must be especially so after two or three days of inactivity and rich feed, having had no chance to work off by exercise the products of digestion. With the liver and spleen in the above-named condition, there must be a great deal more than one-fourth of the

entire mass of blood highly enriched and ready to be poured through the hepatic circulation into the general circulation.

The origin of the large amount of hemoglobin in the urine may, without a doubt, be traced to the action of the poisonous products of digestion upon the blood. These products being largely stored in the torpid liver, and when drawn so suddenly into the general circulation, as during the first few minutes or half hour of vigorous exercise, may prove very destructive to the blood at large.

Again, we know that an excessive amount of carbon dioxide is very detrimental to maintaining a normal condition of the blood, the carbon dioxide being very destructive to the red blood cells, thus setting free large amounts of hemoglobin.

In studying the lesions found in azoturia, we find that the most prominent are to be noticed in the blood, liver, spleen muscles, and kidneys. I name these in order of their importance in my opinion.

In the last specimen of blood examined, it was somewhat darker, more glary; it delibrinated with much more than ordinary difficulty. The serum remained a distinct red, due to the large amount of free hemoglobin in the blood. Have found the blood in the very first of an attack slightly acid, and in the same case two or three days later, normally alkaline.

The liver on post mortem, especially in those dying in the acute stages, is found enlarged, thickened, and the blood found therein is dark, almost black. The spleen is also larger than normal and highly colored, both pointing to a toxemia.

THE MUSCLES.—Some claim to find the affected muscles pale, but we find the muscles of those dying in the acute stages to show numerous blood extravasations, again pointing to a toxemia, the most marked changes usually being in the psoas and gluteal muscles.

In the kidneys are also found very marked changes. They will show a very marked degree of congestion and numerous dark spots showing throughout the kidney tissue; no doubt the dark areas are caused by the actual rupture of capillaries due

to the enormous blood pressure in the kidneys during the first violent exercise. I believe that the following analysis will bear me out in this assertion:

The subject from which this urine was taken belongs to the Toledo Transfer Company. He was stricken on September 12, 1910, was brought into our hospital in an ambulance, remained down for six days continuously, and at the end of eleven days was able to be on his feet the greater part of the time. Only the most important normal and pathologic elements were investigated:

Color—Brownish red.

Odor—Strong urinous, aromatic.

Consistency—Density increased.

Reaction—Very strongly acid.

Specific Gravity—1.0286.

Sediment—Mucin, epithelia, probable hemoglobin.

Proteids—Serum albumin (heavy), serum globulin (good quality), fibrin, hemoglobin and necleo-albumin.

Carbohydrates—Glucose, heavy.

Urea—Uric acid and compounds (urates), earthy phosphates, the sulphates (preformed), the carbonates (traces), indicon (small quantity).

Diminished—The urates.

Excess—The chlorides, alkaline phosphates.

Microscopic—Centrifugated and uncentrifugated sediment; blood cells in great numbers; masses of blood cells; renal epithelia in good numbers; hemoglobin; uric acid crystals of medium development in small numbers.

Fibrin bundles and bladder epithelia in small numbers; light and dark, coarsely granular casts; blood casts in large numbers.

SYMPTOMS.—Every practitioner is so familiar with these that it is most needless to mention them. We will, however, say a few words concerning the paresis about which and its cause there is little or nothing said in our veterinary literature up to the present. Did you ever stop to reason, while treating a horse affected with azoturia (which was unable to rise), why

he could not rise? In my mind, when we look for this cause, we must again go back to where we studied the poisonous products of fermentation of the food in the intestines and the stored-up products of digestion in the liver. Their influence on the motor nerves during the oncoming of the attack is, in my mind, sufficient to cause this paralysis. The progress of this disease depends very greatly on the severity of the attack, also largely on the care and nursing given the patient.

PREVENTION.—A horse used to constant work should, of course, not be allowed to stand at absolute rest for even twenty-four hours on his usual rich diet; limit the amount of food and give plenty of water and either a laxative or slightly laxative diet. In a number of cases recently, when laying a horse up for a few days due to some slight injury, we had them fed laxative food or gave a laxative and prescribed bicarbonate of soda, and are very well satisfied with the results. We find that bicarbonate of soda is valuable in alkalinizing the blood, also in neutralizing the acid products of metabolism, which lead to the solution of hemoglobin.

TREATMENT AND CARE.—In the treatment of azoturia, we differ so widely that I will give only the line of treatment followed by ourselves and through which we have been more than fairly successful during the past year. I am here speaking only about those cases in which the animal is able to rise, as those cases in which the animal remains on his feet may be very successfully treated with "adrenalin" or most anything else, if you please. We usually begin our line of treatment by getting our horse into a comfortable stall, well bedded, as rest and quiet are very important factors to a recovery. We then administer a dose, 1½ to 2 grains of arecoline, subcutaneously, from which we expect a very profuse sweating and a free evacuation of the intestinal tract, through which we get rid of a very fertile source of poisonous products of fermentation. We in most cases repeat the dose, though smaller, usually 1 grain, in six or eight hours if possible, and continue with one or two doses per day for two or three days. We also attempt to get into the

patient during the first twenty-four or thirty hours, 1 to 1½ pounds of bicarbonate of soda. If the animal is too restless, we give bromides in the drinking water or cannabis intravenously. Chloral hydrate may also be given intravenously, but great precaution must be exercised in its administration. The animal should be encouraged to drink large amounts of water and should be kept in the most comfortable position possible; should not be allowed to lie on one side longer than three or four hours at one time and should, as much as possible, be kept on his sternum, which may often be accomplished by the use of sacks stuffed with straw or bales of straw or hay; when improvement begins to show, mild diuretics may be given with stimulants.

DR. S. R. HOWARD, Hillsboro, Ohio, says: "I have been watching for the monthly visit of the REVIEW for about twenty-five years."

IOWA VETERINARIANS OBSERVE THE THIRD COMMANDMENT.—The following is extracted from a recent letter from Dr. Hal. C. Simpson, Denison, Iowa, the faithful and efficient secretary of the Missouri Valley Veterinary Medical Association, and for many years secretary of the Iowa Veterinary Association. It seems so pleasant and gratifying that we have taken the liberty of reproducing it and trust the doctor will not object to our publishing it. If only all veterinarians could extricate themselves from the exactions of routine practice and spend one Sunday each month with their families beyond the tinkle of the telephone bell! "A number of veterinarians and their families within a radius of sixty miles of Wall Lake, Iowa, Lake View Point, spent Sunday, July 29, at this popular resort. The day was spent in bathing, launch riding, lounging around and eating dinner and supper, which the ladies had prepared for the occasion. The day gave the ladies an opportunity to get acquainted and it was agreed to meet again next year. This is a splendid way to develop sociability amongst the profession."

"IF." *

By Dr. C. B. Frederick, Canton, Ohio.

I am not in fear of being contradicted when I say that this big little word is used more often than any other by members of this society. From the men high up to those of us who work for a living, it is all the same.

Its minute formation, compared with the protection it affords, is beyond human power to understand. We use it as a protection when we make mistakes; hide behind it when we have failures; throw it at someone else when we wish to transfer the blame for ours or someone else's failure. In fact, we use it as a sort of everyday dress; never forget it; use it more often than the watch; no more apt to forget it than we are to satisfy the demands of natural impulse. But do we always use it as we should? Do we always sandwich it in our arguments at the right place? "If I had," "If you had," "If they had" done so and so, well and good. "If it would," "If it would not," etc., then there and always comes this word "if."

Our colleagues use it as well as our clients, the first when the other makes a mistake; the second when the first, perhaps, is to blame. We use it in condemning our drug house—the drug house in defense of her product. When we have failures, we say, "If I had only used some other firm's product, I would have been successful." The drug house says, "If you had used our product as your materia medica directed, you would have been successful."

When we learn of our mistaken diagnosis revealed by post mortem, we say, "If, if I had been more careful in my diag-

* Presented at the January, 1911, meeting of the Ohio State Veterinary Medical Association.

nosis, there would not have been occasion to use this little 'if'." Then, in our often careless prognosis, we should not have need of using it, yet I assure you, brother practitioner, none of us are wise enough to cope with the uncertainty of environments. We also oftentimes forget that a good guess is often better, or at least equal, to a big "if." Had we used more tact and less dependence on drugs, we would have saved the use of this word again. Would that we all might remember that history oft repeats itself, perhaps no more often than the actual duties of our life work. If we are slow to establish a practice, if the 'phone does not ring often enough, if our door bells are pulled less frequently than we wish—then it is that we say "if."

"If" I had not advertised my new colleague by questionable methods, "if" I had been kind and helpful toward him, "if" I had padlocked my tongue apparatus, "if I had strewn roses in his pathway instead of crowning him with thorns—then again I would not have use of repeating "if."

Had I been courteous, had I been prompt in responding to calls, whether hurried or not; had I remembered that one's success is built on the cases that recover, had I remembered that our reputation is not built on dead patients—then we can or cannot have need of using the word "if."

Oh! that we were as wise now as we thought we were when we entered the portals of the veterinary profession. How easy it would be now to quickly eradicate tuberculosis, glanders, hog cholera; how the incurable organic ailments would fade away before our superior attainments, and how nicely we would regulate the offices pertaining to the various boards of health and animal economics. Yea, wherever we go, following the straight path of professional purity or wandering along the crooked highway of quackery, this word is just as big, just as mighty—always standing out ready to block our pathway and turn our hopes sidewise, leaving us to again ponder over this little word's mightiness.

We may stop and ask ourselves, "Why is it that every graduate in this state is not enjoying a lucrative practice? Why

is it that the heads of our boards of live stock are criticised? Why is it that our veterinary colleagues fail to receive their share of abuse"? Simply because the complainer shields his littleness behind this big "if." True, our board of live stock makes mistakes; true, our colleagues are not without fault; yet we find, on investigating the source of criticism, that they too often come from, "he who is without fault should cast the first stone." Too often the critics are store-box philosophers, whose sole ambition is to stand and sit—a sort of professional parasite who dotes on his ability to hide back of this word "if," implying, supposing or "ifing," as it were.

How easy it would be for the workers of our own profession "if" we would all aim at the highest professional mark and all be ready to stand in line for professional equity and higher attainments, never to be satisfied to walk the trodden paths of ages past, but try to discover something new, something better, something for the coming veterinarians to look up to with admiration and thankfulness.

The veterinarian is criticised by his sister profession—why? We are criticised by our legislators—why? Simply because of our professional jealousy. True, we cannot help envying our successful brother, that is a natural instinct within us; yet, however envious we may be, never allow that envy to be thrown on the screen of everyday public life, but better emulate the successful brother than to attempt to cover him with your "ifs"; for just so long as we devote more time to assailing our successful colleague's success than to our own business, just so long will we be tobogganing our own way to failure—not alone to ourselves, for in our downward way we grope about and either hinder our brothers' advancement or carry them with us.

Why is it that every graduate practicing in this great state of Ohio is not now a member of this or some other recognized association? Simply because his excuse is "if." You courteously ask why? His answer is always "if." Why? Because of some little sixpence of an excuse, emphasized with that word "if."

When we hope for that which is best, when the workers strive to better conditions—spend time and money to lift the profession to a higher plane—it is then that we meet opposition from those whose sole aim is to pull backward; but when some achievement is accomplished, when something for their best interests is handed to them, they greedily gulp it down and go about with puffed-up chests, singing their own praise: "See what I have done!" The procedure reminds us much of the old story of "Betsy and the Bear."

Better that we emulate the good qualities of our brother practitioners; emulate the good deeds they have done—digest the rich legacies left us. If we do so, we will assimilate their good and grand discoveries and will then grow portly as a profession and will continue to develop into a Samson association, whose every wish will be recognized and every whim answered by the legal manufacturers in the State House. We have just as good men, just as good societies, just as good material to draw from. This being true, why is it that we do not receive proper courtesies at the meetings in the legislative halls. Simply because of the "ifs" that quackery has instilled into the men that have it within their power to enact or table our bills when opportunity is presented. "If" quackery is to be abolished and our profession expects to receive its just demands, more men must be enlisted in regular practice, for in every stock-raising county in our state, as well as in the cities, there is a dearth of legalized men. This being true, pray tell me how can we compel stock owners from calling illegal men; for just as long as the stockman is unable to get a registered man, his only alternate then is the neighboring quack. The regulars are at present enjoying the most fruitful business of their careers. That there is more demand for good men to-day than ever before is emphasized on every hand. All the veterinarians with whom I am neighborly associated are unable to take care of the business which is knocking at their doors; now, if all the illegal men in the state are debarred by legal invasion, the legal men will be swamped and either force them to give up much business

or fill premature graves. As long as the demand exceeds the supply, just so long will quackery exist, law or no law; the brotherly feeling as well as the dollar forms a sort of osmosis between the stock owner and his neighbor. Scores of times are we called miles away by some poor fellow who, by kindness, has produced azoturia, indigestion or something else, and we are unable to go. No regular can be secured. Then the quack is called. I am not a supporter of the quack or quackery, yet when I see what is done and will be done until we as a profession are able to more fully supply the demand for legalized men, this situation will continue to exist. Let us all enlist as many bright young men as we can into the bright side of this matter and fill our colleges with embryonic material that will sooner or later remove quackery. The greatest antidote yet discovered for this disease is the college graduate. They expel them quickly and surely. This being true, the remedy is more college men. To me this is the only feasible means of stamping them out. Then the laws, properly enforced, will keep them out. In many of our cities and dairy districts we are blessed with food and dairy inspectors, who, with their busy practice, fill minutely the duty involved. In that same community scores of diseased animal products are for sale from wagons and over counters. The inspectors are not wholly to blame—$50 per month is about the average compensation. "If" the health boards expect to get $200 worth of services for $50, they are sadly disappointed; they are "ifing" pure and simple. "If" they ever hope to get proper services, they must not "if," but sooner or later raise the price, or continue to get service the same as to-day. We must, as a body, either ignore the price paid, or laws must be enacted whereby the man who fills these positions is to receive a salary equal at least to that paid by the B. A. I.' "If" they do so, the problem of pure food will be solved partially at least.

Again, "if" the regularly inspected tubercular herds in Ohio were quarantined, what would be the result? "If" every diseased milk-producing cow were destroyed and the owner

compensated at two-thirds her actual value, do you believe the surplus in the state treasury would long exist? "If" again. Dear brother, I am not a pessimist, yet I can plainly see but one solution: either discover a tubercular serum to prevent or wipe out the disease, or rely solely upon sanitation and Pasteurization.

Gentlemen, what I have said may have done no one any good and, I pray, no harm. For my purpose, suffice it to say that the work of this association has never been greater or its strength taxed more severely than now. Every individual effort must be put forth by all. Let us remember that this association is the keystone of veterinary progress in our state, and must expect nothing for the welfare of us individually, only through the archives of our society. Let us ever hope that the bonds of unity will be strengthened—the closer affiliation of all—a steady march onward.

Let us aim high and to the mark, let us be true to our highest ideals, and may that aim ever be to do our best.

It was worth the trip to Toronto to listen to Dr. Rutherford's remarks in connection with his introductions as toastmaster at the banquet at "McConkey's."

First Veterinary School.—The 150th anniversary of the erection in Lyons, France, of a veterinary school will be celebrated in that city about the middle of May, 1912. Preparations are now forming to commemorate the event in a fitting manner, and invitations are being issued to all veterinary schools in the United States and elsewhere for the purpose of having delegates in as large a number as possible.

It is authentically recorded in the annals of veterinary science that the world's first veterinary school was founded in Lyons in 1761, since which time similar institutions have been inaugurated in many countries, the last being reported from Abyssinia.

In connection with this anniversary it is planned to establish a local museum, the exhibits of which in archives, illustrations, instruments and appliances will give a complete view of the evolution of instruction in veterinary medicine and surgery. Particular attention will be paid to the development of the pioneer school in Lyons.—*From Consular and Trade Reports.*

SOME DISEASES OF THE NEW-BORN FOAL.*

By H. Fulstow, V.S., Norwalk, Ohio.

Spring will soon be with us again, and with it the diseases incident to parturition. One of the common and often fatal diseases of the new-born foal is "Septic Arthritis." This disease is the result of an infection with pathogenic organisms, gaining entrance to the system before cicatrization of the navel has occurred. The loss that it entails in some breeding districts is enormous. Year after year breeders are continually losing from one to a dozen or more foals from this disease alone. Such losses might be reduced to a minimum if thorough sanitary precautions were observed. Parturition occurs in filthy, dirty places where no precaution has been taken to guard against infection. When dropped, they wallow around in dirty stalls and yards, the raw, bleeding navel coming in contact with soiled bedding and dirty floors, germs of all kinds gain entrance through the large open vessel, especially the omnipresent pyogenic organism. In from twenty-four hours to several days or weeks, the above-mentioned disease develops. Pure cultures of a streptococci can nearly always be obtained from the joints. A very large percentage of all such cases could be prevented if good sanitary precautions were taken. All mares that are to foal early before a run out to grass is possible, should foal in a clean box stall that has been prepared by thoroughly cleansing and disinfecting. For this purpose, chloride of lime or copperas water is excellent to use on the floors and the usual lime wash with some disinfectant added, for the walls and ceiling. The mare must be watched and, as soon as the foal is dropped, the

* Read before the Ohio Veterinary Medical Association, January, 1911.

navel must be ligated with a stone ligature that has been soaked in a good antiseptic solution, about one inch from the belly and the remainder severed below ligature. The umbilical stump must be soaked in a strong bichloride of mercury solution for a minute, and this must be repeated daily until complete cicatrization has occurred. Inside of thighs, udder, tail, etc., must be washed with some mild antiseptic solution before the foal is allowed to suck. Both should now be removed to another box stall, prepared in the same manner as the first. Stall No. 1 should be thoroughly cleaned and disinfected before another mare is allowed to foal in it. On nice, bright days, mare and foal should have exercise in a clean yard or paddock. The sanitary condition of the stalls must be maintained from day to day. In districts where this disease is prevalent the foals could with benefit receive a prophylactic dose of stock vaccine made from the common species of pyogenic organisms. Then in the system anti-bodies would be formed ready to cope with the living organisms, should entrance occur. Anti-streptococcic serum seems to work well in conjunction with the usual eliminative treatment practiced in all toxemia.

Retention of the Meconium.—Another common disease among foals which are born early in the spring, before their dams have had a chance to run at grass and have been kept up all winter on dry feed. A very important predisposing cause of this condition, and one frequently overlooked in the condition, is the loss of the "collostrum" milk from the udder of the dam previous to parturition, due to excessive and abnormally early glandular activity. In from a few hours to two days, if the foal does not receive enough collostrum—nature's stimulant to peristalsis—to cause evacuation, that is, of the meconium or first feces, such symptoms of distress will be noticed: dull and dejected in appearance; back arched and straining, also lying down a quarter part of the time; absolute indifference to the teat, with the usual symptoms of enteralgia following and rapidly increasing in severity, till death from inflammation of the bowel results. Pregnant mares previous to foaling should

be fed on laxative food. Grass, if in season, is the best, but when not available, bran mashes, carrots and clover hay. If the foal is born while the mare is still on dry feed, a suitable dose *Ol Ricini* with a little aromatic should be administered and its action aided by enemas of glycerine and water or soapy water at intervals. The foal must be carefully watched until the meconium has passed and golden yellow feces is being evacuated. When such measures have been neglected and symptoms of intestinal disturbances are being manifested, the above treatment must be given, but more vigorously, and in some cases with the addition of some stimulant, as whiskey in small quantities. The oiled finger must be inserted into the rectum and any feces that are within reach removed. Sometimes, when digital manipulations are unsuccessful, a piece of bailing wire formed into a loop and carefully used is capable of reaching and removing feces that otherwise would be impossible. The little sufferer must be kept comfortable and warm as possible. Another disease which occurs frequently among the lower animals and in partially civilized countries, not infrequently among human beings, subsequent to birth, is "Tetanus." Curative treatment is almost always unsuccessful, but by prophylactic measures as recommended for septic arthritis, the disease can be practically eliminated.

If any veterinarians have chanced to leave Toronto without seeing the photographer who took the group picture in front of Convocation Hall, they may procure one by writing to Mr. W. J. Johnston, No. 239 Victoria street, Toronto, Canada. The price is $2.00.

Horse Likes to Kill Rats.—Tiffin, Ohio, Saturday.—Snowball, a horse driven by an express company, has a specialty of catching rats. He stands with one front hoof raised over a hole, and when a rat appears down comes the hoof and there is another face in rat heaven. Already the horse has killed several hundred rats. Snowball is of almost pure Arabian blood. Formerly he traveled with a circus. He rarely misses a rat.—*Special despatch to the Herald.*

A NEW SULPHOCARBOLATE.

By Herbert F. Palmer, Chicago, Ill.

It is now thirty years since the sulphocarbolates were proposed and used as intestinal antiseptics by Dr. Waugh. Considerable difficulty was experienced for a long time in obtaining these salts in sufficient purity for internal administration to human beings, as up to that time they had been employed only in veterinary practice, and externally. Their value was not recognized by this branch of the profession, and it was only after they had been firmly established in ordinary medical practice that their control over mange was discovered.

It was not long before clinicians began to realize that they had in these salts not merely another intestinal antiseptic or another salt of zinc, soda or lime, but a group of remedies possessing qualities distinguishing them from all others of their class.

Opposition was aroused the moment they began to be popular; they had no financial interests to push them and printers' ink is a power even with the medical profession. Each of the wealthy and powerful advertising houses had a preparation of its own which they pressed upon the notice of the profession. True it is as in the day of Caiaphas, the high priest, that if a thing has real merit it will survive; and to-day the sulphocarbolates are the first thought when intestinal antiseptics are mentioned.

Each of the three sulphocarbolates has its place—zinc as an astringent, soda as an antacid, lime as a reconstructive; and the combination of these in the noted W-A Intestinal Antiseptic

Tablets has been approved by the testimony of many thousands of physicians. Since their manufacture has been so perfected as to secure a satisfactory quality, their value has been established without dissent.

No matter how good a remedy may be, it is not good enough if a better is to be had. The objections to the sulphocarbolates are the unpleasant taste and the large dose. Here presents an interesting question: In studying the effects of the iodides and bromides, the suggestion was made that when these haloid elements were combined with small-dose bases, the iodine and bromine effect of a full dose was equivalent to that of a full dose of the same elements when combined with the alkalies. In other words, that a milligram of the iodide or bromide of gold, arsenic or mercury equaled in iodine or bromine effect a gram of potassium iodide or bromide. Clinical trials show that there is some truth in this; also that the effects of hyoscine, morphine or quinine hydrobromide are not identical with those of the sulphates. Even the minute quantity of acid in the valerate of zinc or strychnine gives those salts a variation of action from the sulphates.

Somewhat recently the remarkable power exerted by copper over the living microscopic impurities of water have been realized, and now this metal is employed to purify vast quantities of drinking water, such as is supplied to New Orleans. The sulphocarbolate of copper may prove a means of securing the advantages of the sulphocarbolates with much smaller doses. From some observations it appears to have about the same irritant action as sulphate of copper. The adult dose, then, would be a milligram every waking hour, for in these doses the sulphate is effective as an astringent especially in the diarrhœas of the aged, and that beyond any other remedy.

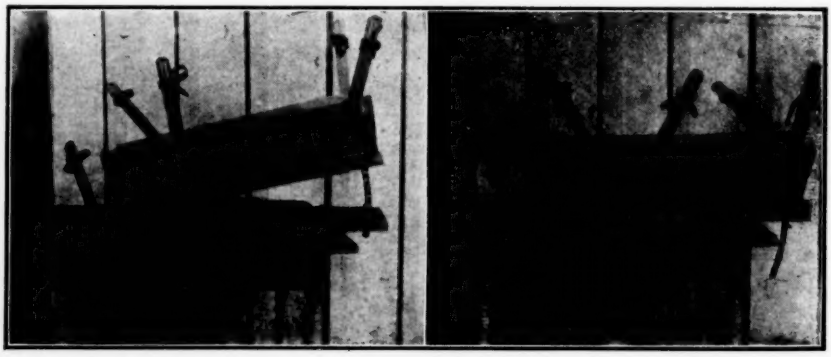
Should the sulphocarbolate of copper prove a success it will be a distinct advance in therapeutics. It may be tried in gastric and intestinal conditions where an antiseptic is indicated—fermentation, acidity, flatulence, fetid stools, etc.

A CANINE OPERATING TABLE.

By M. Ray Powers, D.V.S., State Veterinarian, Clemson College, S. C.

The accompanying photographs of a canine operating table may be of interest to Review readers. For some time I have felt the need of a table of this kind for spaying bitches, remov-

ing tumors, etc., and, being unable to find one of this style, I had this made at a total cost of less than $4. It has been in use for a year and has given perfect satisfaction.



The photographs clearly show how the table is made. Dimensions are as follows: Length, 5 feet 8 inches; trough, 8 inches deep, 10½ inches wide at top; arms, 12 inches long with slots (about 6 inches) for the straps.

This table will accommodate dogs of all sizes, as the anterior arms can be shifted about one-half the length of the table. The arms are securely held by means of thumb screws, which also permit the dog's legs to be held at any angle. The application of three coats of bathtub enamel adds greatly to the appearance and cleanliness of the table.

THIRTY veterinarians entered a motor boat for a trip out of New Haven through New Haven Bay into Long Island Sound, on August 2d. The aquatic sport proved too much for 50 per cent. of them, as only fifteen noses could be counted when the little craft again started out upon the choppy waters of the Sound. Or it may have been the shore dinner provided by the Connecticut Veterinary Medical Association for its members and guests at Mansfield's Grove that lowered their estimation of their swimming accomplishments. Speaking of shore dinners, the Nutmeg State has set a standard that the Empire State will have to hustle to come up to at Coney Island on September 14th, at the close of the state meeting.

SECRETARY WILSON IS 76. Has been in the Cabinet longer than any one in U. S. history. Washington, Aug. 16.—James Wilson, Secretary of Agriculture, who is the oldest member of the President's Cabinet and who has held his portfolio since 1897, a longer period than any other Cabinet officer in the history of the Government, to-day celebrated the seventy-sixth anniversary of his birth. Secretary Wilson was born August 16, 1835, in Ayrshire, Scotland, which was also the birthplace of Robert Burns. He came to this country when 16 years old with his parents, and, after a brief residence in Connecticut, settled in Tama County, Iowa, combining farming with politics. Wilson served in the Iowa Assembly and was three times a Representative in Congress. He is absent from here on a vacation which will include a series of lectures on agricultural themes.—*New York Press.*

REPORTS OF CASES.

SOME CASES FROM MY NOTE BOOK.

By Chas. M. Caszy, V.S., New York, N. Y.

Responding to a call to a sick cow, found a four-year-old Grade Holstein down. After making an examination, asked the owner when the cow was due to calve; he replied in about three weeks. The cow had a temperature of 104° F. and appeared to be paralyzed in her hind parts.

After an ineffectual attempt to get her up, she was put on stimulants and left where she was. Called the next day and found cow still down but eating good. We got her up by use of slings and continued the stimulant treatment; her temperature was now 103° F. The following day the owner came to town and reported the cow able to stand alone and get up and down all right, and did not think it necessary for me to go out to see her again.

About three and a half weeks later, I received another call from the owner of the cow, to the effect that she had calved all right, but had not "cleaned," and desired me to come out to his farm and take care of her. On arrival at farm, I found the cow and her heifer calf in good shape except for the presence of the after-birth, which I removed, and left everything looking good.

About ten days later I received another call from the same man to the self-same cow, in which he said she appeared as though she *again* wanted to have a calf. On my arrival, I found the cow, sure enough, "in labor," and upon examination, found to my great surprise the presence of another calf. The cow required assistance this time, but in a short time I removed a second large calf (ten days after the birth of the first one), put the cow on stimulants and returned to town. I saw the owner three weeks later, and he said the cow and both calves were doing well.

Some Heat Prostration Cases in Which Cocaine was the Principal Drug Employed.

Case I.—July 1, 1911. Bay truck horse down on the street with heat prostration; gave 3 grains of cocaine hypodermically, and administered at ten to twenty-minute intervals small doses of tincture of nux vomica and aromatic spirits of ammonia, showering head, body and extremities with cold water from hydrant. The horse got up in one hour from the time of administering the cocaine, was sent home in ambulance and made complete recovery.

Case II.—July 1. Bay truck horse, heat case, not down but " wobbly " on feet and unable to proceed further. Gave 3 grains of cocaine hypodermically, nux vomica and aromatic spirits of ammonia by mouth and showering. Was all right and able to walk home at end of half an hour.

Case III.—July 4. Gray truck horse, not down, but unsteady and unable to proceed further. Gave 3 grains of cocaine hypodermically, 2 drachms of sulphuric ether hypodermically, nux and aromatic spirits and showering. Walked home after three-quarters of an hour.

Case IV.—July 4. Bay truck horse down. Gave 3 grains of cocaine hypodermically, nux and aromatic spirits, ice packs to head, showering; got up at end of one hour; sent home in ambulance. Made complete recovery.

Case V.—July 5. Sorrel truck horse down. Gave 3 grains of cocaine hypodermically, nux, aromatic spirits, sulphuric ether hypodermically, one dose; ice packs to head, showering; got up in one-half hour; sent home in ambulance. Made complete recovery.

Case VI.—July 6. Large truck horse down. Gave 3 grains cocaine hypodermically, nux, and aromatic spirits per mouth, showering. Got up in half an hour and was walked home.

Case VII.—July 7. Gray truck horse, medium weight, down. Gave 3 grains of cocaine hypodermically, nux, and aromatic spirits per orum, showering. Got up in one hour from time of injecting cocaine. Was very unsteady on feet for another half hour, and then walked home, where convalescence was completed.

Case VIII.—July 7. Bay truck horse (poor condition) down; brain symptoms present. Gave 3 grains of cocaine hypodermically, sulphuric ether hypodermically, nux and aromatic spirits by mouth at intervals; showering. At end of half

hour seemed to be gaining; gave 1½ grains cocaine hypodermically. Half hour later running back a little; gave another 1½ grains cocaine, after which he seemed as though he was about to get up. Went to office for more medicine; returned to find him dead, three hours from the beginning of the treatment. Three factors worked against a favorable termination of this case: (1) the poor condition of the animal; (2) the fact that he had dropped the day previous from the heat (driver had not reported it); and (3) he lay exposed to the direct rays of the midday sun on a hot asphalt street on one of the hottest days during the "heat spell," from 11 a. m. till 2 p. m.

Case IX.—July 10. Sorrel truck horse down. Gave 3 grains of cocaine hypodermically, nux and aromatic spirits at intervals, ¼ grain strychnine hypodermically, showering. Got on his feet in 1½ hours; sent home in ambulance; recovered.

Case X.—July 11. Bay business horse, not down but swaying when stopped, and registering a rectal temperature of 108° F. Gave 3 grains of cocaine hypodermically, nux and aromatic spirits by mouth, showering. All right in about three-quarters of an hour, but not returned home for seven hours, when sun had set.

Case XI.—July 11. Bay business horse, not down, very "wobbly" on feet. Given 3 grains cocaine hypodermically, stimulants and showering. Recovery in about one hour.

Case XII.—July 11. Brown truck horse, not down, very unsteady on limbs; respiration very accelerated, pulse irregular. Gave 3 grains of cocaine hypodermically, nux, aromatic spirits, showering. Walked into temporary quarters at end of an hour and a half.

Case XIII.—July 12. Gray truck horse (very heavy) down, thrashing. Gave 3 grains of cocaine hypodermically, followed by usual stimulants. Repeated cocaine three times after first dose, 3 grains each time, making a total of 12 grains administered during the 3½ hours the horse was down. At the end of that time the horse got up and was sent home in ambulance in good shape.

Case XIV.—July 13. Gray horse (heavy), not down, very unsteady on feet and unable to proceed. Gave 3 grains of cocaine hypodermically, followed by nux and aromatic spirits. Rallied in half hour and was later walked home.

Case XV.—July 13. Gray truck horse down. Gave 3 grains cocaine hypodermically, followed by usual stimulants. Repeated

dose of 3 grains cocaine half hour later; horse still down, and still later 1½ grains of cocaine. Horse finally got on his feet at expiration of 2½ hours and was sent home in ambulance.

Case XVI.—July 13. Chestnut truck horse down. Gave 3 grains cocaine; usual stimulants by mouth; showering. Later, another 3 grains of cocaine, and still later 1½ grains cocaine. Got horse on feet at end of two hours. Sent home in ambulance.

Case XVII.—July 13. Gray truck horse down. Gave 3 grains cocaine, nux and aromatic spirits, showering. Got on feet in half hour and later walked to stable.

Case XVIII.—July 14. Brown truck horse, not down, very unsteady on feet. Gave 3 grains of cocaine and usual stimulants. Recovered in about three-quarters of an hour.

The first case reported, that of the cow, was seen in Onondaga County, N. Y.; the heat cases were seen in New York City, and I report them because of the very satisfactory results from the use of cocaine in this class of cases which I have experienced in the treatment of those reported. There were probably as many more cases treated at the same time in the same practice in identically the same manner, in which the results were the same; but I have only reported from my own notebook those cases that came under my own personal observation. This treatment may not be new to the majority of practitioners, but I have never seen it used except here two years ago, and again this summer, and felt after this *second* experience with it, it was my duty to my colleagues to tell my experiences. If others have used it in heat prostration, I should like to hear from them through the REVIEW; and if any of them have cows that calve twice in ten days, I should like to hear from them also.

PUNCTURE OF ABDOMINAL CAVITY BY WOODEN PICKET.

By L. J. HERRING, B.S., D.V.S., Wilson, N. C.

On April 14, 1910, while at the Georgia Experiment Station, I was called to see a black mare that had jumped up on a picket fence, made of pine palings, sticking one of the pickets into her abdomen just posterior to the ensiform cartilage. The

paling broke off in the cavity, leaving enough protruding to catch hold of, so the owner had it pulled out by a negro man.

When I arrived on the scene I found about a bucketful of the small intestines out, but the owner had a clean sheet wrapped around the mare and kept her up until I got there, although she was in much pain from strangulation. I at once cast the mare and proceeded to clean up the intestines with a 1 to 1,000 bichloride solution, replaced them, and sutured the inner layer of muscles on the peritoneal side, then the muscles and the skin. In each layer I used continuous sutures, but left long ends so they would hang out of the wound. I used plenty of a mixture of iodiform and boric acid as a dry dressing while suturing. A bandage was put around the mare to hold the dressing in place and 4 c.c. of nuclein given hypodermically. The mare was left in the hands of nature then. Upon my return the next morning I found the mare whikering for food and only had a degree rise of temperature. The wound from now on was dressed every other day and the nuclein solution was given every day for four days, and then every other day. After two weeks, calls got farther apart and the stitches were taken out without any trouble, they being left long. Within five weeks the mare was driven, and to-day she is working and the scar can't be found easily.

ANOTHER instance has been brought to our notice of a wandering agent representing himself as an authorized agent of the AMERICAN VETERINARY REVIEW and a London veterinary journal, who has fleeced one of our old subscribers out of $4.50, which he represented as the price for which he would supply the REVIEW and the London paper for one year. Of course neither of the magazines received the subscriptions taken and the dishonest individual walked off with the money.

We have repeatedly warned subscribers against just such swindles, explaining again and again that the REVIEW has *no* wandering authorized agents and never sells the REVIEW for less than the publisher's price, $3.00. Again we repeat, do not be taken in by their representations, but send your subscriptions *direct* to the REVIEW office, where you will be immediately taken care of.

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

ADENOMA OF THE LEFT THYROID BODY, OPERATION, RECOVERY [*F. Chambers, M.R.C.V.S., G.VS.*].—Ten-year-old trooper has a huge swelling extending from four inches below the base of the left ear under the throat and a short distance on the right side The swelling is as big as two polo balls. It was hard, seemed fibrous in consistency and has a large suppurating hole on the under surface It had been blistered several times without advantage. Suspicious of botriomycosis he received a treatment of iodine externally and internally with no result. The tumor kept enlarging, more ulcerations of the skin occurred, its removal is decided and performed under chloroform. It required the removal of a large piece of skin to expose it, and it was only after a careful dissection that the tumor was extracted after over an hour of delicate work Hemorrhage was profuse and controlled with ligatures and forceps. The removal of the growth left exposed the posterior angle of the left submaxillary bone, the larynx in its entity, the pharynx, the left carotid and the two jugulars. Suturing of the wound was impossible, and the large gap was dressed twice a day with Lysol's solution and smeared with creosoted vaseline. During the treatment, the animal took pneumonia but pulled through it and after some time, as the cicatrization was going well, it closed up by degrees, having only a small salivary fistula as complication. At the time of writing complete recovery was close at hand.—(*Vet. Record.*)

SARCOMATOUS LIVER IN A DOG [*Carter Armstrong, M.R.C.V.S.*].—For three weeks this fox terrier, ten months old, has been losing flesh. He is off his appetite, drinks constantly and has frequent vomition. He is in an emaciated condition; his visible membranes, are pale, temperature 103 degrees Fahrenheit. Abdomen is painful on pressure principally over the stom-

ach. The dog was found the next day dead in its kennel. Autopsy revealed a large liver occupying most of the abdominal cavity. It presented the appearance of a tumor quite unlike liver tissue, in fact it was a new growth. The spleen showed areas of similar appearance. The liver weighed 11 pounds 13½ ounces. On microscopic examination it was found to be a round-celled sarcoma. The stomach was inflamed and had several gastric ulcers, one of which had eaten through the walls of the stomach. —(*Vet. Record.*)

DOUBLE-SIDED OPERATION FOR GUTTURAL POUCH DISEASE [*Capt. Wakefield Rainey, A.V.C.*].—This Canadian troop horse has a somewhat bad smelling discharge from both nostrils; this has a muco-purulent character; distinct fluctuating swellings exist on both sides of the guttural pouches; temperature is 102.2 degrees—there is dysphagia. Horse is prepared for operation. From a point about the middle of anterior border of wing of atlas two incisions were carried through the skin, one upward, the other downward. The triangular flap of skin was dissected. the parotid exposed and detached near the anterior border of wing of the atlas by blunt dissection, the stylo-hyoid muscle was located and a bold puncture made through it. Pus escaped freely. A seton soaked in tinct. iodine was introduced and brought out at Viborg's triangle. About one pint of pus was allowed to escape and continued to flow out for several days. A similar operation was performed on the other side some four days after, which was followed with same results. There was some dysphagia this time, and it required a great deal of careful and attentive nursing to pull the horse through. Only a small subcutaneous abscess complicated the case and retarded the complete healing. Six weeks from the date of the first operation were necessary to obtain radical recovery.—(*Vet. Record.*)

TETANUS [*Henry B. Eve, M.R.C.V.S.*].—Aged black gelding had a ball given to him on a thatch—peg—as he was difficult to give it to. After a few days he gave manifestations which left the writer no doubt as to the diagnosis. Traumatic tetanus, probably the result of a lacerated wound in the pharynx caused by the point end of the thatch-peg piercing the mucous membrane when delivering the ball. *Treatment:* Animal isolated in dark loose box, ears plugged to avoid hearing sound; no sling; sheep skin over the neck, dorsal and lumbar region, hypo. inj. anti-

tetanic serum twice a day for nine days. Internally oil lini by enemas, nicotine suppositories. The ninth day electuary of glycerine, belladonna, extract cannibas indica and hydrocyanic acid three times a day. Recovery in three weeks. Nutritious diet of gruel, linseed tea, beef tea enemas, milk and eggs, etc.—(*Vet. News.*)

CHLOROFORM IN THE TREATMENT OF CHOKING [*W. Lotham, M.R.C.V.S.*].—A year old heifer had been ill for two days and was suspected of being choked with a piece of turnip. The obstruction was indeed felt half way down the neck. The probang was used but with no effect, and two or three attempts remained unsuccessful. Chloroform was then administered, and as soon as the animal was fairly under, the probang was introduced and without difficulty; the spasm of the œsophagus having subsided the piece of turnip was forced down the œsophagus. This is the second case treated in the same manner by the writer and with similar result. The treatment is worth trying in preference to œsophagotomy, or when the obstruction is in the thoracic portion of the œsophagus.—(*Vet. Journ.*)

TWO CASES OF EQUINE TUBERCULOSIS—MOTHER AND DAUGHTER [*J. A. Gilruth, D.V.Sc., M.R.C.V.S.*].—*One;* a nine-year-old mare, reared on the place of the owner and fed with milk from a cow, said "not to be a good doer." The mare showed symptoms of tuberculosis, but the owner would not allow her to be tuberculined. She was destroyed several weeks after and the examination of her spleen, the only organ which the writer could secure, was found with lesions of tuberculosis, confirmed by microscopic examination.

The second case was that of another mare, daughter of the first, which also presented undoubted manifestations of generalized tuberculosis; the thorax, the udder, lymphatic glands, etc., were diseased. The animal was immediately destroyed and tuberculous lesions were found in the spleen, the udder, the abdominal cavity and in the liver, which weighed 35 pounds. The kidneys, round the posterior aorta, in the lungs and the pericardium.—(*Vet. Journal.*)

ETHYL. CHLORIDE IN FOLLICULAR MANGE [*J. B. Buxton, M.R.C.V.S., D.V.H.*].—Record of four cases, three of which proved successful, the fourth dying after a few days:

1°. Case had typical lesions on the lips, nose, top of the head and along the back.

2°. Case had the whole chest affected besides the head, nose, paws and fore limbs.

3°. Case, most severe of all; had the chest, throat, head, lips, eyelids diseased, with skin thickened and riddled with holes as though it had received a charge of small shot. This animal died after the fourth day of treatment.

4°. Case had lesions of the chest and paws.

In all the demodex was found in the pus and scabbs taken from any of the diseased spots. The treatment was the same for all, viz., thorough cleaning and drying of the parts, spraying of ethyl chloride applied slowly until the skin was insensitive to the prick of a needle, and the application continued for about a minute after, care being taken not to freeze the skin too hard to avoid subsequent necrosis. One, two and sometimes a third application is necessary.—(*Vet. Journ.*)

PAROTID ABSCESS BY FOREIGN BODY [*S. J. Nolton, M.R.C.V.S.*].—Record of a case that occurred in a Guernsey cow which had a swelling occupying the lower two-thirds of the right parotid region. Not very painful; it was opened and a good deal of salinous pus with putrefaction odor escaped. On exploring the cavity a piece of wire was detected, one end of which was buried in the gland tissue and the other in the skin. It was extracted, measuring 2⅞ inches in length. The animal never showed any difficulty in mastication or in swallowing. Washing with carbolic acid solution 2½ per cent. brought about rapid recovery.—(*Vet. News.*)

DYSTOKIA IN A BITCH [*T. A. Hency, M.R.C.V.S.*].—Well bred black young bitch, two years old, had two years before, fracture of the pelvis; is now suffering from fœtal dystokia, being two days over her time. The trouble was due to contraction of the pelvis and a large still born fœtus. Cesarean operation was indicated, if the dog could be saved. After thorough disinfection the abdomen was opened, the body of the uterus was brought towards the opening, surrounding it with boric gauze. One by one five pups were removed. The lips of the wound were well wiped and the uterus carefully replaced, and after the peritoneum being sutured, the wound was closed with sterilized silk, interrupted sutures, and a dressing of boric gauze protect-

ing the whole. Rest, daily dressing of the wound, careful diet and eventful recovery was the result.—(*Vet. Record.*)

UNEXPLAINED HEMORRHAGE [*G. H. Livesey, M.R.C.V.S.*].—Favorite fox terrier is old (15 years), is noticed getting rather short of breath. Perhaps too much food; his lips have been noticed smeared with blood. His mouth is examined, and only three canine teeth and two molars are the remains of his dentition. The back molar on the left side is covered with tartar and a little blood is oozing from the gum. The tartar is removed, and the blood is found coming out of the socket of the posterior root. Extraction; is indicated and carried out. Hemorrhage follows very abundant and difficult to stop. The next day it returns and cannot be controlled except by cotton wool soaked in adrenaline and plugged in the cavity. But after a short time the wool came out and severe bleeding returned. The dog died notwithstanding all attempts to help him.—(*Vet. Record.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

CONTRIBUTION TO THE STUDY OF ALOPECIA IN HORSE [*Messrs. Tayet & Tortigue, Army Veterinarians*].—Whatever may be the various causes of alopecia the three following cases are interesting:

(1) Half thoroughbred mare is cast, and fired on the tendons of the anterior legs. Very nervous, she struggled much during the operation. Three days after, on the body and principally the thoracic walls numerous tuffs of hair came off and continued to do so; so that 10 days after the operation the skin of the thorax was entirely hairless. There had been no privitus, no parasites—general conditions and appetite have remained good.

(2) For similar conditions a thoroughbred receives the same treatment. Eight days after the hair came out by tuffs and soon the skin is also hairless.

In these two cases perhaps the condition may be attributed to sudden chill or again nervous effect.

(3) Half thoroughbred mare is presented to the writers because of patches over the body where the hair is coming off. These depilations continue to increase, the head and the greatest

part of the body are hairless. Then the process continues, and the mare is in a short time entirely without hair all over her body; she has the same appearance as a Chinese pug. There has been but slight privitus, no parasites, the general condition and appetite have remained good. The alopecia was of short duration, the hair grew again rapidly.

What was the cause?—(*Rev. Vet.*)

TESTICULAR LOCALIZATION OF EPIZOOTIC LYMPHANGITIS [*Mr. L. Teppaz*].—A stallion of 10 years of age, has been treated for several months for recidiving serotal fistula of the right side, from which but little pus escapes. Some time previous he had been affected with epizootic lymphangitis. Shortly after he had a large abscess of the testicular region which, after being punctured, left the fistula rebellious to all kinds of treatment. A probe introduced into it, goes in some 10 centimeters, the testicle is hard, intimately adherent to the serotum and the animal is finally castrated. The enucleation was quite difficult on account of adhesions. The testicle shows an irregular fistula, parallel to its great axis and three others shorter emptying in the first. The pus that is found is thick, of dirty yellow color and contains in great quantities *Lencocytzoon piroplasmoides.* There was no spermatozoides neither in the pus or the epididymis The testicle incised shows nothing particular, but frottis of its tissue shows no spermalozoid but a large quantity of leucocytis with leucocytozoons.—*Bull. Soc. Scien. Vet. de Lyon.*)

MORE CASES OF ASPERGILLOSIS [*Mr. Chretien, Sam. Vet. Asperg. of the Hen*].—At the autopsy of a hen taken off from a market stand, the following lesions were found: All the airy sacs were much dilated and plainly visible. In incising their membrane it is found thickened and covered on the inside with an abundant deposit of brittle yellowish fibrine, while on its inner face it is covered with a greenish moldy deposit. The right abdominal sac is much dilated and as a consequence the liver is pushed away to the left. The Glisson's capsula is the seat of chronic inflammation. There is also severe pericarditis—with the pericardium—covered with a fibrinous coat analogous to that of airy sacs. The right lung is the seat of pneumonia. The microscopic examinations of the sacs and of the pulmonary serosity reveals the presence of mycelium, with numerous forms of fructifications, characteristic of aspergiltus fumigatus. The

moldy deposits of the sacs were due to asperpillus fumigatus. Cultures in bouillon and on potatoes were purely those of asperigillus.

Aspergillos of Goose. A thin goose presented similar lesions in its airy sacs. The left lung was also diseased.—(*Hyg. de la Viande.*)

CONTRIBUTIONS TO THE PATHOLOGY OF THE THYMUS [*Mr. L. Naudin*].

First Case.—An eight-month-old heifer in perfect health is suddenly taken with short breathing, refuses to eat and appears very sick. She dies at the end of an hour. *Post mortem:* Cadaver is in good condition, conjunctive little injected. No lesion in the abdomen. Opening the thorax leaves 3 or 4 liters of fluid escape, both lungs are excessively œdematous, the perilobular connective tissue is gorged with limpid serosity; no inflammatory lesion. The thymus is very large and forms a bilobulated mass, which on being cut through is filled with numerous hemorrhagic points. This condition resembles that in cases of sudden death in children, attributed by physicians to hypertrophy of the thymus.

Second Case.—Six-year-old dog has frequent spells of dry cough. His condition is good, auscullations and percussion are negative. After long treatment and all forms of medication the symptoms get worse, he loses flesh, his breathing becomes very difficult, tuberculosis is suspected he is destroyed.

Post Mortem.—On opening the chest, there appears in the anterior part of it a whitish mass, ovoid, divided in two lobes by a slight depression. It measures 20 centimeters in the anteroposterior diameter. It is soft, fluctuating and has on its superior face a groove—for the passage of the trachea and œsophague. The lungs are healthy. Pleuro, pericardium and lymphatic glands also. Incised, this mass, which can be nothing else but the thymus, is made of a fibrous membrane surrounding a cavity, divided into numerous lobules filled with a thick fluid looking like sour milk. This mass enclosed in the mediastinum has acted as adenopathies of that region.—(*Rev. Gen. de Med. Vet.*)

MIXED OR STERCORAL CALCULUS [*Mm. Cazalbou and Serisé, Army Veterinarians*].—Fifteen years old, this mare is taken with colic, not severe. She lays down on lateral decubitiss or on her back. She has no evacuations, repeated rectal examinations give

undecisive results. Anorchia not complete, abdomen shows dull pain on pressure. Ausculation of the cœum and second portion of the large colon indicates slight borborygms. Slight tympanitis. Constipation continued, notwithstanding laxatives, pilocarpine, eserine. After 10 days' of treatment an abundant diarrhœa follows a purgative of castor oil and intestinal irrigation. Recovery is looked for. Three days later, the symptoms return and last until death, which occurred some three weeks after; constipation having remained rebellious to all treatment, only a few hard, small, black balls of feces being evacuated after rectal irrigations.

Post Mortem.—Liquid mixed with food is in the abdominal cavity. Stomach is empty, small intestines shows spots of hemorrhagic congestion. Large colon filled with matter more or less soft. At 75 centimeters from its origin there is a transversal laceration. In its terminal extremity and closing the origin of the floating colon, there is a hard mass, nearly spherical, 20 centimeters in diameter, sure form in aspect. It is a stercoral calculus weighing 1 kilo 0.400 grams. Cut through its middle, it shows in the centre a piece of coal surrounded with sand, around this there is a zone of packed alimentary matter, which is itself enveloped by a coat of sand and gravel. The whole is surrounded by a layer of alimentary substance smooth and like felt.—(*Rev. Gen. de Med. Vet.*)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

RUPTURE OF THE INFERIOR AND LATERAL SESAMOID LIGAMENTS IN A MARE [*Dr. Luigi Menicagli*].—"*Sestilia,*" an English thoroughbred mare, while being exercised in a racing track, fell suddenly as if one of her legs had been fractured. She got up but was very lame. The fetlock of the left fore leg was down nearly on the ground, and the limb rested on the heels of the foot and the fractured face of the two first phalanges. Prof. Vachetta called to see the case, explored carefully the fetlock joint and the condition of the tendons of the flexor tendons. These were found uninjured. It was possible to give to the joint movements of flexion and extension. There was a little above the centre of the joint, a transversal depression and above it the

two great sesamoid bones were easily made out attached to the bifurcated end of the suspensory ligament, but separated from the the os suffraginis by the rupture of the inferior sesamoid and lateral ligaments. The case was very serious and an unfavorable prognosis given. The career of the mare was at an end as a race horse, but the owner decided to have her treated, and if possible saved, to use her for breeding purposes. To allay the inflammation cold astringent applications of vegeto-mineral water were applied and an apparatus (Ortosome of Defays), was applied. After a few days the mare accustomed to it, was able now and then to get up. When after a few days the inflammation had somewhat subsided, the ortosome was modified in being made stronger and a permanent supporting dressing applied, so as to immobilize the joint as much as possible. After fifteen days the mare could move with short steps. The fetlock was considerably swollen, cool and hard and ankylosis was going on gradually. The author lost sight of the mare which had been removed to a breeding place.—(*Il Nuovo Ercol.*)

VERTEBRO-COSTAL VARIATION IN A HINNY [*Doct. Camillo Mobilio*].—Destroyed for anatomical practice, this Hinny was 12 years and presented the following peculiarities in its skeleton: 7 cervical vertebra, 18 dorsal, 1 vertebra between the dorsals and the lumbars with characters of the vertebra of both regions, 5 lumbar, 5 sacral, there were but 9 caudal remaining after the amputation of the tail. With the exception of the 26th vertebra all the others were normal. There were also 18 pairs of ribs.

The 26th, as that which followed the 18th dorsal, had all the characters of the first lumbar in the normal animal with the exception of a certain smaller transverse process. At the extremity of each of these, there was a rudimentary rib, articulated by arthrodia with the vertebra. The two rudimentary ribs were two lamella quite falciform in shape, with rounded extremity, much curved in their length with their convexity turned backwards. That of the left side was shorter than the right (10 and 12 centim.).

At the inferior extremity of each of these costiform appendages there was a fibrous prolongation, resting upon the cartilage of the preceding rib. In this fibrous prolongation, there were small bony nuclei, much smaller on the left than on the right, where they were well developed.—(*Giorisale della R. Soc. Naz Veter.*)

INTESTINAL STRANGULATION BY PEDUNCULATED LIPOMA [*Doct. Camillo Toffa*].—A gelding has colic for several hours, passed neither feces or urine. There is complete anorexia. Temperature is 39° C. pulse frequent; 50 centig. of hydrochlo. of morphia are given subcutaneously, and the animal appears quieter. Later when the effects of the morphia have subsided the symptoms return. The temperature has raised to 39.8° C. there is severe dyspnea; the animal lays down and struggles continually. Obstruction of the intestine is then suspected and chloryd. of pilocarpine is administered without giving rise to any fecal passage. The animal dies the next day. At the opening of the abdomen a long portion of the small colon (?) about 80 centi. is blackish and in a state of gangrene. Between the folds of the intestine is discovered a tumor of fat, true lipoma, pedunculated and floating through the intestinal mass. The peduncle of this tumor is twisted twice round the intestinal folds and obstructed it completely. As soon as the peduncle was cut and the tumor removed the intestine was perfectly free.—(*Clin. Veter.*)

LARGE TESTICULAR TUMOR IN A MULE [*Dr. Ruffo Galli*].—While tumors are not exceptional in the body of our domestic animals, those of the testicular region are rather rare, although few cases are on record where the size reached by the neoplasm has been very large, one having been observed in Alfort weighing twenty pounds.

This case was observed in an old animal, bought for surgical exercises. He had a swelling of the scrotum as big as a man's head, which by its development prevented the isolation of the region in two sacs; in fact there seemed to be but one testicle. The animal was in poor condition, moved with difficulty, the hind legs apart. A dull fluctuation was detected, and on exploration gave escape to a little yellowish serosity. Rectal examination excluded the possibility of hernia. Searching the other testicle it was found way up the inguinal canal, much reduced in size. The left testicle was the diseased one, and it was decided to operate on him. After preparing the instruments and two large clamps, the animal was cast and secured as for castration. A long incision on the great curvature of the swelling divided the skin and subcutaneous connective tissue and with care the other layers of the envelope were isolated until the cord and its coverings were reached. One of the clamps was put on

and the operation completed—the right testicle was removed also without difficulty. The animal was then destroyed. The tumor weighed 2,300 grams. There was on its surface smaller growths. The nature of various sections of the tumor was that of sarcomatous formation.—(*Il Nuovo Ercol.*)

FRACTURE OF THE TWELFTH RIB IN A BOVINE—LACERATION OF THE RUMEN—GASTRIC FISTULA [*Doct. Enrico Sampoli*].—In a long article the author describes the conditions of the animal, the object of an injury which presented first a large swelling on the left side, followed after a few days by suppurative collection and fistulous tract. The detection of the fracture was quite difficult to make out. No treatment was allowed, and at the postmortem the following lesions were recorded: Large collection of food from the rumen mixed with pus and necrotic structure. Wide wound of the eleventh intercostal space with muscular laceration, fracture of the twelfth rib, adhesive peritonitis holding the rumen with formation of a thick ring preventing the dropping of the rumen contents into the abdominal cavity, laceration of the rumen 6 centimeters long with necrosis of the borders of the median injury, small amount of serosity in the peritoneal cavity. The injury of the rumen was situated about 3 centimeters lower than the injury of the intercostal space.—(*Il Nuovo Ercol.*)

CERVICAL CARCINOMA IN A DOG [*Dr. Asturo Galli*].—One day without apparent cause this dog showed a swelling on the left side of the neck. After two months it grew larger, and to-day it is a tumor, spheroidal, as big as a large fist and situated on the left side of the neck, where it hangs by a long peduncle measuring six centimeters in length and permitting ample oscillatory motion of the growth. Surgical interference was suggested, and the operation performed by Prof. Vachetta after careful antiseptic preparations and under local anesthesia with stouaine. A circular incision was made near the base of the peduncle, the tumor isolated and separated from its subcutaneous relations. The peduncle rich in blood vessels was amputated, the hemorrhage being readily controlled. Several sutures completed the operation and the recovery was perfect and uneventful. The microscopic examination of the structure of the neoplasm revealed its carcinomatous nature.—(*Il Nuovo Ercol.*)

RUSSIAN REVIEW.

By S. A. Gruener, M.V.S.

Theory and Practice: Wasserman's Reaction in Diagnosis of Glanders [*V. V. Fedders*].—The method of complement fixation applying to diagnostic purposes is called "Wasserman's Reaction," and was first used for diagnosis of syphilis. In recent times a beginning has been made to use this method for diagnosis of glanders. The author made many experiments using this method, and the result of his work he has published in pamphlet form. It is well known that the basis of the method of complement deviation or fixation is presented in the phenomenon of hemolysis. Hemolysis, as we know, is the property of red blood cells (of sheep or some other animal) dissolved with the serum of another animal, for instance, rabbit.

If we introduced the red blood cells of the sheep (intraperitoneally or intravenously) into the body of another animal—rabbit—after some time we could obtain from the latter animal (rabbit) serum which should have the property, in a weak solution, to dissolve the red blood cells of the sheep.

But if we heated this rabbit serum to 56° C. it would lose its power to dissolve the red blood cells of the sheep and we should not obtain hemolysis.

To render this active again, it will be enough to add the fresh serum from another normal animal (for instance guinea pig).

The scientists conclude that every immunizing serum consists of two substances—one thermostabile which is called *amboceptor* and another *termolabile,* which after heating to 56° C., is rendered inactive and which is called the *complement* (add substance).

This last substance is contained in every serum in sufficient quantity.

To dissolve red blood cells it is necessary to have two substances.

Serum without amboceptor is not active and does not dissolve the red blood cells or if amboceptor in small quantity, this dissolving will not be distinct. The previous treatment of rabbit-injection into its body of the red blood cells of the sheep increased the amboceptor, and the serum from this rabbit would be active in a weak dilution.

Serum without this complement is also not active and does not dissolve the red blood cells.

The heating to 56° C. destroyed the complement, and therefore the serum after heating does not act.

If we should add the normal serum, whose content is a complement, the phenomenon hemolysis would occur.

This serum which dissolved red blood cells (serum of rabbit) is called *hemolytic serum.*

A famous German scientist, *Ehrlich,* has explained the phenomenon of immunity.

According to his theory, by every introduction into the animal organism of any foreign substance (foreign blood, protein substance, bacteria, etc.), reaction occurs.

This reaction consists in the formation in the organism of a particular or distinct *antibody* or *amboceptor.*

If foreign blood be introduced into the organism *hemolytic amboceptor* is formed.

If bacteria be introduced it has a stimulating effect on the production of a *bacteriolytic* amboceptor.

A poison which stimulates the production of an antibody (or amboceptor) is called *antigen.*

The amboceptor in which complement is fixed becomes anchored to the antigen and the phenomenon of bacteriolysis occurs.

If the serum, which contains specific bacteriolytic amboceptor is heated to 56° C., then it loses its property of anchoring the antigen.

But after adding the serum of an normal animal (guinea pig), the anchoring takes place.

The serum of the very sick animal contains specific amboceptor which has the property with the complement of anchoring the specific antigen.

The serum of a horse that has glanders, contains specific amboceptor, which could with its complement unite with antigen.

Therefore: (1) *Inactivated* heated to 56° C. serum of suspected horses (bacteriolytic amboceptor);

(2) Specific glanders antigen, and

(3) Serum of normal guinea pig (complement) unite together after being placed one hour in an incubator.

We see that one needs just the same serum (normal guinea pig) in the hemolytic system and in the bacteriolytic system.

If we add hemolytic amboceptor and red blood cells to the mixture of antigen, the inactivated serum of a diseased horse (amboceptor) and the serum of a normal guinea pig, then after

this addition, no hemolysis will take place, inasmuch as this hemolytic system required a complement.

This complement being already fixed in bacteriolytic system is lacking in the hemolytic, that is to say, has *deviated* therefrom.

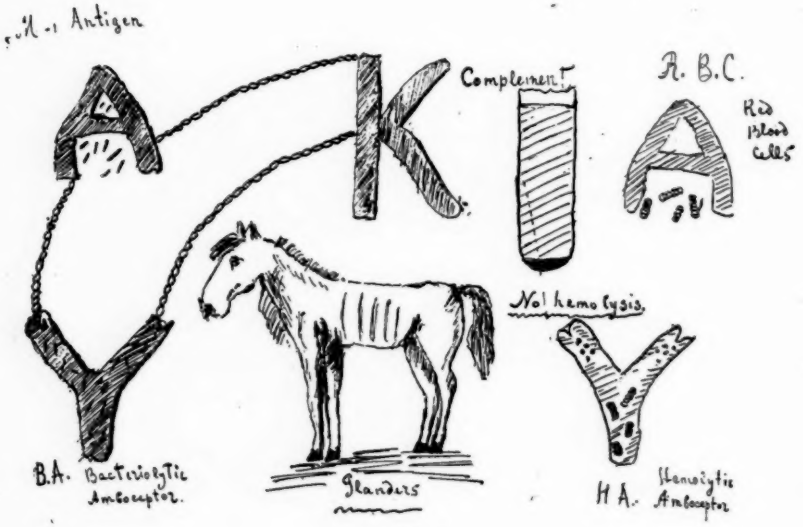


CHART I.

In this it will be seen that the antigen and bacteriolytic amboceptor have united with the complement blocking the union of the complement and hemolytic amboceptor with the red blood cells to produce hemolysis.—Glanders.—No hemolysis.

On the other hand, if the horse from which the serum is taken is in health not infected with glanders, then no anchoring occurs between the antigen and the bacteriolytic amboceptor, because the serum does not contain specific bacteriolytic amboceptor.

The complement then will be free and by addition of hemolytic amboceptor and red blood cell there will occur *hemolysis.*

Therefore hemolysis appearing shows the *absence of the disease;* not occurring shows the *presence of the disease.*

In presence of the disease the serum contains specific amboceptor which anchors antigen by complement *fixation.*

In the absence of disease, the serum of the suspected horse does not contain amboceptor and anchoring does not occur, and the complement will be free to take place, in hemolytic system, if we should add hemolytic amboceptor, and the red blood cells.

The author explained this phenomenon with original picture:

Plate I., showing the phenomenon of the horse infected with glanders.

Plate II., showing the phenomenon of the horse healthy.

In the third picture the author has showed what the result would be, if we should take for the test an *excessive quantity of the complement.*

As the picture indicates an excessive quantity of the complement being present, has united with all the substances of the hemolytic system, and also of the bacteriolytic system.

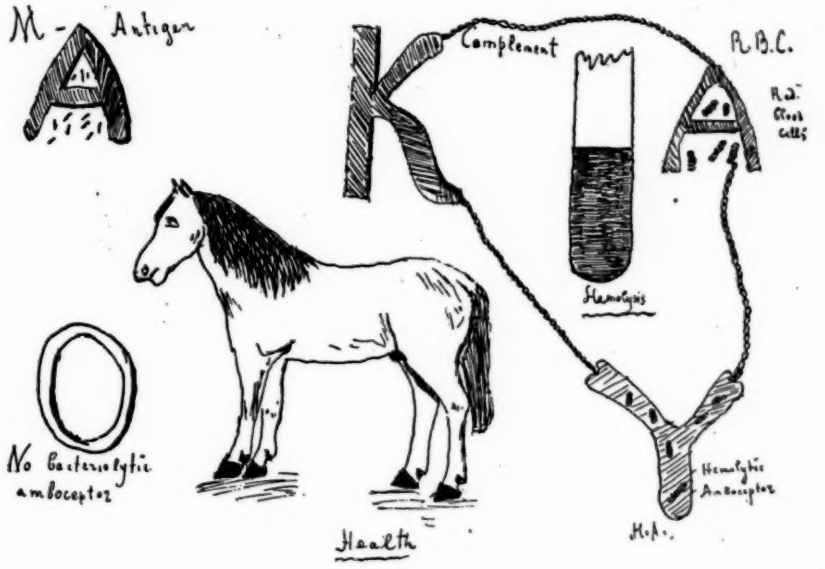


CHART II.

In this it will be seen that the lack of the bacteriolytic amboceptor in the serum of the suspected horse has allowed the complement and the hemolytic amboceptor to unite with the red blood cells and hemolysis has taken place.—No glanders.

In this case hemolysis has occurred, and we can make false conclusions that the horse, the serum of which has been tested, is not sick.

In order to avoid the error, it is necessary to determine the exact quantity of complement needed to chain or anchor only our system, that is to say, it is necessary to make the *titration* of the complement.

The titration of every substance used is also necessary.

The substances which are used in the fixation complement test are as follows:

(1) The serum of the suspected horse which is to be tested (bacteriolytic amboceptor).

(2) The antigen (glanders bacilli extract).

Excessive Quantity of the Complement.

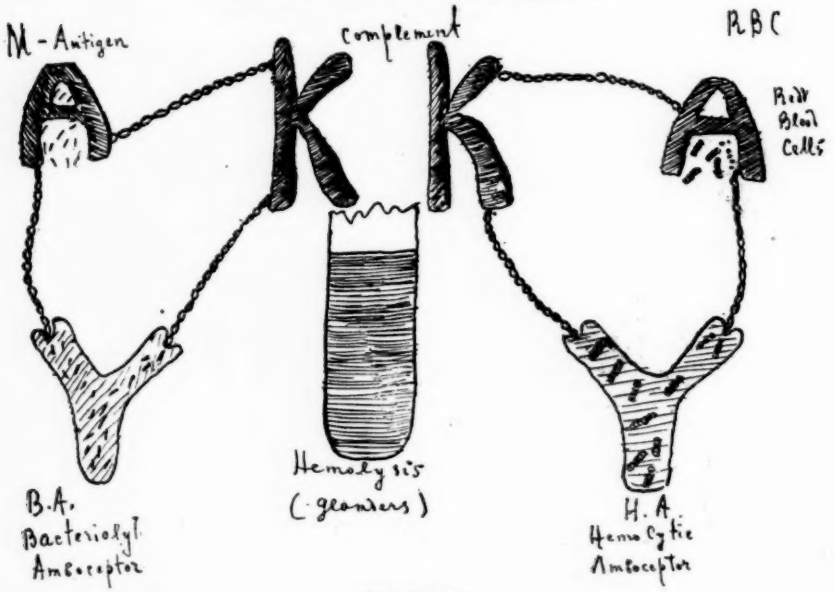


CHART III.

This illustrates an error in technique in which too much complement has been used. Although glanders is present the titre or proper quantity of antigen and bacteriolytic amboceptor does not deviate all the complement. The complement left over after this union unites with the hemolytic amboceptor and with the red blood cells, and hemolysis takes place, although glanders be present in the suspect.

(3) The complement (serum of normal guinea pig).

(4) The hemolytic amboceptor (serum of rabbit which has been treated with red blood cells of sheep.

(5) Red blood cells of sheep thoroughly washed.

The author has described in detail how to prepare every substance; how to titrate the complement, the hemolytic amboceptor, and how to obtain everything which is necessary for making the fixation test.

In the first place he has described how to obtain the blood from the sheep.

After the sheep blood has been obtained from the jugular, the physiological salt solution is added to defibrinated and filtrated blood and several times centrifuged and the clear supernatent fluid taken out with a pipette then pour into it a clear solution and centrifugate again.

This washing must be repeated until the red blood cells are thrown down, and fluid above is completely clear.

1. *Hemolytic Amboceptor.*—The author prepared the following:

The rabbit is inoculated in the ear intravenously with red blood cells, suspension in salt solution from a sheep.

The author made 4-6 injections at intervals of 3-4 days suspended in the same quantities of physiological salt solution.

After several injections a small amount of blood is taken from the veins of the ear of the rabbit; the serum of the rabbit is then titrated in order to determine how much is necessary for the producing of hemolysis.

(3) The *Complement.*—The author obtained by severing the carotid and jugular and killing guinea pig.

After the collection of the blood the serum is allowed to separate, is collected and titrated.

(4) The *Antigen.*—This is a shake extract of bacilli mallei in physiological solution.

All investigators use this extract preparing it from culture of glanders bacilli.

But in regard to the dangers (?) in connection with the preparation and to render the process more simple, the author has decided to try using the mallein as antigen.

He has taken the mallein prepared in the INSTITUTE OF EXPERIMENTAL MEDICINE AT ST. PETERSBURG, made dilution in salt solution 1 :500 of the mallein—it is sufficient for the test.

The serum of the animal to be tested the author obtained from blood drawn from the jugular vein of the suspected horse. For this purpose, the author recommends a hypodermic needle of a 10 c.c. syringe, a sufficient quantity of blood is drawn for testing purposes.

The author described in detail the *titration* of the *hemolytic* serum (amboceptor) and the *complement.*

Two doctors in Russia, V. Avrorov and S. Seslavinsky, died last year from glanders infection in preparing the antigen in the laboratory.

It is not necessary to make extract concerning this because the reader will find its exact description in the pamphlet—Dr. J. Mohler and Dr. A. Eichhorn—"*The Diagnosis of Glanders by Complement Fixation,*" W. 1911.

Also, it is needless to explain the complement fixation test. This description one may find in above pamphlet.

The author gives detailed instruction concerning the making of this test.

His experiments as well as the work of other authors show that the fixation complement test for glanders diagnosis is the valuable and most perfect method.

The work of *Mr. Fedders* is peculiar in regard that he used *mallein* as the antigen, instead of the extract of glander bacilli, which has been used by other authors.

EXPERIMENTS IN IMMUNIZATION OF HORSES AGAINST GLANDERS [*Prof. A. V. Dedulin*].—The laboratory of experiments of M. Marxer and the author showed that "pharasa," prepared from glanders cultures, was harmless to horses and would immunizate them.

Therefore the author decided to make field experiments on a large estate at Carlovka, situated in the province of Poltava, South Russia. For the ordinary agricultural work on this estate, about 3,000 horses were used, but during the grain harvests and particularly to the peasantry of various parts of 10,000 horses belonging to the peasantry of various parts of Russia were brought into requisition. These horses, coming from all parts of Russia, infected the horses belonging to the estate with glanders.

This occurred in 1909. In this year 276 horses succumbed to glanders. After such a loss, the managers of the estate were eager that experiments be made in the actual immunization of horses against glanders, and they gave 600 horses for this experiment.

First these animals were tested with mallein and gave negative results. Then 303 were inoculated by the method of *Prof. Levi and Dr. Marxer.** To avoid any mistake the author secured the "pharasa" for this experiment directly from Dr. Marxer.

From the 303 horses tested, 269 were inoculated according to Marxer's usual process and 34 responded immediately. The methods used in these cases were two-fold; first, the usual method

with the first 269 animals, *i. e.*, 0.3 " pharasa " dissolved in sterilized water was injected hypodermically into each horse. After three weeks 0.4—0.8 were given to the same horses in the same manner. That the absorption might be more perfect, the pharasa was injected 0.1 in 5.0 of sterilized water at three separate points.

The rapid method in this process consists in injecting: the first day 0.1, the second day 0.2 and the third day 0.4.

All the horses bore this inoculation very well. The inoculated point became inflamed and swollen, but after 7 days, the swelling was entirely absorbed, neither pus nor gangrene appearing. Some rise in temperature was observed.

During the following 16 months, 14 horses perished from glanders on this estate, but of the inoculated horses not one died.

Besides the experiments conducted on the estate in Poltava, the author tells us of further experiments performed at the experiment station in the Cossack province of the Don. There were sent to this station 2 inoculated horses. After 14 months the inoculation was checked by hypodermic injections of virulent cultures of glanders which rendered the animals extremely sick. They recovered, however, within 2 months. The author, Prof. Dedulin, does not consider these experiments to have completely solved the problem, and he will continue his experiments. —(*Arch. Veterinary Sciences*, 1911, May.)

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* Prof. *Levy*, *Dr. Blumental* and *Dr. Marxer*, Centralblatt f. Bact., Orig. 1906-13.

HUNGARIAN REVIEW.

THE TREATMENT OF METACARPAL EXOSTOSES [*Dr. Joseph Loebl*].—The frequency of metacarpal exostoses in the horse, their location (intermetacarpal, postmetacarpal, etc.), and their complications, surely justify the endeavor to cure this disease quickly and thoroughly, since it interferes so much with the usefulness of the animal. First of all the hoof must be properly treated so that the weight of the body is evenly distributed. For the lameness, rest is essential, and the Priessnitz compress, the hydrothermo regulator are of great benefit, as is also massage. Various irritant ointments are recommended. Hoffman uses iodine and mercury ointments. Gibson, Mayall, Knauer and

Plosz remove metacarpal exostoses by operative measures. The author also was successful in removing the bony new growth in one case by operation. In other cases he obtained very good results with Klein's Antiperiostin. In one horse there presented a metacarpal exostosis 4 c. m. by 3 c. m., with an elevation of 2.5 c. m., and indistinct margin. This was rubbed with antiperiostin for ten minutes. The resulting swelling disappeared in four days, after six weeks the crust also came away. The bony growth, however, could no longer be felt under the crust after the fourth day, and the horse was laid up for only four days. In another case the exostosis on the metacarpus measured 5 c. m. by 2 c. m., with a thickness of 2 c. m. After applying antiperiostin, the bony growth disappeared in five weeks.—(*Allatoroosi Lapok, No. 7*, 1911.

In Prof. Hobday's remarks at the A. V. M. A. banquet at Toronto, this eminent London veterinary surgeon spoke in optimistic terms of the outlook for the veterinary profession. He said in so many words, that " the outlook was never brighter than at the present time."

The very excellent article on " The Elimination of Tubercle Bacilli From Infected Cattle and the Control of Bovine Tuberculosis and Infected Milk," by Prof. Veranus A. Moore, Director of the New York State Veterinary College, in the recent report of that institution, has been translated into German, that it may be used in teaching the classes at the Berne Veterinary School.

It is gratifying to note that every detail of the programme for the post-convention trip planned by the Review was carried out identically as described in the August issue, by a goodly number of those in attendance at the Toronto meeting. A large delegation from Massachusetts, Pennsylvania and New York completed the programme in the trip over Lake Champlain and Lake George and, finally, in paying a visit to the state capitol at Albany.

CORRESPONDENCE.

WOODBURY, N. J., July 28, 1911.

Editors AMERICAN VETERINARY REVIEW:

I have recently used in several surgical cases a preparation of iodine bearing the trade name of Iodone, and it has qualities that recommend it strongly in high-class veterinary surgery.

It is decidedly anæsthetic, is not easily rubbed off a wound surface, liberates free iodine on contact with moisture, and is a thoroughly good antiseptic.

The formula is $(C_6H_4C_2O_3)_2KI.I_4$; and Iodone Surgical Powder contains sufficient amount of this compound to liberate 2 per cent. of Iodone in contact with the secretions of the wounds or any other moisture.

This is in no sense an ad. for the makers; I am merely calling attention to this product, as in my experience it is the first compound of iodine which really liberates iodine. Iodone is of value, because it permits of a *dry* iodine dressing, and as its price is not prohibitive, it should be popular in veterinary surgery.

Yours very truly,

T. B. ROGERS.

WASHINGTON, D. C., August 13, 1911.

Editors AMERICAN VETERINARY REVIEW:

Through your columns I desire to express my deep gratitude to the Army Veterinarians for a beautiful silver punch bowl recently presented me through Dr. John R. Mohler, of the B. A. I.

This beautiful bowl bears the following inscription:

"Presented to
Dr. John P. Turner
by the U. S. Army Veterinarians
In appreciation of his services."

I feel that the little mite I have contributed toward their future happiness is not deserving so beautiful a remembrance.

Very truly yours,

J. P. TURNER.

SOCIETY MEETINGS.

ALABAMA VETERINARY MEDICAL ASSOCIATION.

The fourth annual meeting of the above association was held at Birmingham June 16 and 17. The following is a summary of work of the meeting:

M. F. Jackson, President, opened with his annual address.

Report of Secretary and Treasurer, Chas. A. Cary, read and approved. Thirteen members answered to the roll call.

Eleven new members were elected. Seven visitors were present.

I. Paper read by E. M. Duncan on Sanitary Milk. Discussed by Drs. Bahnsen, McAdory, French, Stoples and Cary.

Construction of barns and keeping up of cattle with defective udders.

II. Report of a post mortem examination, and importance of post mortem examination always being held by a veterinarian.

Post mortem findings, first case. Case of strangulated small intestine through gastro hepatic omentum.

Second and third cases of diaphragmatic hernias. Animals lined 15 to 24 hours after first symptom appeared.

Discussed by Drs. French and Bahnsen.

III. Black Leg, by Dr. J. E. Threadgill.

Causes, modes of transmission, symptoms, animals affected and preventive treatment.

Discussed by Bahnsen and French. Limits of age of single and double vaccination. Adjourned until p. m.

IV. Dr. A. H. French—Rabies, annals susceptible, incubation, infection secretions, etc.

Discussed by Bahnsen, McGuire and Cane.

V. Dr. R. V. Hazelwood—Report of case of intussusception and uses of bacterines in nail punctures and fistulous witness.

Discussed by Whitfield, Piatt, Jackson and Cary.

VI. Dr. J. E. Threadgill—Reports on 12 cases of tetanus, 11 of which recovered.

Barium chloride and tetanus antitoxin used.

Bahnsen claims period of incubation will aid in prognosis.

One to 6 days, 99 per cent. dil.

Fourteen to 24 days, cases recover if they can be kept from lying down and from taking inhalation pneumonia.

Keep excretory organs active.

VII. Dr. W. D. Staples—Neurectomies in veterinary practice—much discussed.

VIII. Dr. P. F. Bahnsen—Purpura hemorrhagica.

Discussed by McAdory and T. D. Jackson.

IX. Dr. O. W. Payne—Rheumatism and its treatment.

X. Dr. J. A. Piatt—Ergotel in congestion of lungs, and potassium permanganate in forage poisoning. Ergotel hypodermically in congestive stage.

Fifteen grs. pot. permanganate in quart of water for forage poisoning.

XI. Dr. T. D. Jackson—Strangles.

Transmitted by way of alimentary canal and air passages; 25 per cent. of shipping fever develops into strangles; 75 per cent. influenza or its complication of pleuresy, pneumonia or bronchitis.

XII. Dr. W. M. Howell—Tuberculosis in Alabama Oxen.

XIII. Dr. R. B. Nixon—Dipping, Vat.

XIV. Dr. I. S. McAdory—Duty of the Veterinarian to the milk producer.

XV. Dr. M. F. Jackson—Contagious pustular dermatitis. Cases reported.

XVI. Dr. C. A. Cary—Methods of Identifying Dairy Cattle in Dairy Inspection.

Officers for ensuing year are:

W. B. Fleming, President.

W. D. Staples, Vice-President.

C. A. Cary, Secretary and Treasurer.

CLINIC.

A polyclinic was held on Saturday, June 17, at Dr. French's Veterinary Hospital.

Dr. Piatt did double plantor neurectomy. Dr. W. D. Staples did a like operation. Drs. McAdory and Bahnsen amputated the penis of a pointer dog. Dr. Cary operated on an umbilical and also on a ventral hernia. Dr. Bahnsen demonstrated his method of casting and restraining animals. Dr. French gave a demonstration in the use of rabies virus.

A RESOLUTION.

Resolved, That the Veterinary Medical Association endorse the work of the tick eradication in Alabama, and that the facts show that the government, the state, the counties in which the work has been conducted, has been well done along the line of tick eradication, and the education of the people in the benefits, the value of and the best methods adopted to the work, and in no case shall the work be abandoned.

Adjourned to meet at Auburn or Columbus, at direction of the Executive Committee.

B. F. BAHNSEN.

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of the Connecticut Veterinary Medical Association was held in New Haven, Wednesday, August 2, 1911.

In the morning and early forenoon the members and guests assembled at Dr. J. H. Kelley's Hospital, enjoying themselves in looking about the place and examining patients; greeting old friends and partaking of refreshments which Dr. Kelley had generously provided, that those who left home on the early trains would not suffer from hunger, before the regular dinner.

At eleven o'clock the company embarked, in a launch chartered for the occasion, for a sail down the harbor to Mansfield's Grove for dinner, which was the best dinner ever served to the members in the history of the association.

After dinner, Dr. Judson, the president, called for speeches from Dr. R. W. Ellis, Dr. B. D. Pierce, Dr. J. H. Kelley, who spoke briefly in regard to enjoyment of the occasion. Dr. Ellis outlined the plans under consideration for the special train from New York to Toronto, for the A. V. M. A. meeting, and urged every member of the association to try and arrange his business so as to be able to go to the meeting with the New York delegation. The doctor also extended a cordial invitation to everyone present to attend the meeting of the New York State Veterinary Medical Society, to be held in Brooklyn, September 12, 13 and 14. Dr. Pierce also urged the doctors to attend the convention, saying that the Massachusetts Association had plans under way

for a special train from Boston, and they would be pleased to have any of the Connecticut members go with them, that cared to. The president then called upon Hon. H. O. Averill, Commissioner on Domestic Animals, for a few remarks. Mr. Averill thanked the members for the invitation to the meeting, and explained the principal features of the new law regarding the importation of cattle into the state, also explained what he would probably do as to inspecting and tuberculin-testing of cattle, though no definite rules had been formulated at present, but would be issued as soon as possible after the law took effect. At four o'clock meeting adjourned, some of the party returning to New Haven by boat, others by trolley car. All present were highly pleased with the entertainment which had been so nicely planned, and carried to a successful termination, by Drs. Kelley and Whitney, as it surely was the most enjoyed outing the association, and its guests, ever had.

Members present: Drs. Thos. Bland, H. E. Bates, F. F. Bushnell, H. C. Balzer, Chas. L. Colton, G. E. Corwin, Jr., Geo. L. Cheney, B. K. Dow, J. L. Devereaux, L. B. Judson, A. C. Knapp, J. H. Kelley, P. T. Keeley, G. W. Loveland, B. D. Radcliff, Oscar Schreck, H. L. Tower, R. S. Todd, J. E. Underhill, H. Whitney.

Honorary members: Dr. R. W. Ellis, New York City, H. O. Averill, Commissioner on Domestic Animals.

Visitors: Dr. B. D. Pierce, Springfield, Mass.; Dr. R. P. Lyman, East Lansing, Mich.; Dr. A. W. Sunderland, Bristol; Dr. D. R. Keresey, Danbury, and veterinary student Mr. McCuen, New Britain, also Mr. Haverstick, representing a pharmaceutical house.

B. K. Dow, Secretary.

PROF. E. A. A. GRANGE, Principal of Ontario Veterinary College, deserves a vote of thanks from the entire veterinary profession of America, first for inviting the A. V. M. A. to Toronto, and second, for the admirable way in which he provided for the comfort of its members while there.

DR. WILLIAM W. YARD, Denver, has been appointed State Veterinarian of Colorado, having as well as the duties of a state veterinarian, the entire charge of the State Meat Inspection Laws. The doctor still retains the position of Secretary of the State Veterinary Examining Board.

NEWS AND ITEMS.

THE Pacific Coast was represented at the A. V. M. A. meeting at Toronto by Drs. Archibald, Fox and Keene. Dr. and Mrs. Nelson were present from Spokane, Wash.

DR. J. E. NANCE, who recently encircled the globe, as alluded to in a recent issue of the REVIEW, has located at Muskokee, Oklahoma, where he will engage in general practice.

DR. WILLIAM H. GRIBBLE, Washington Court House, Ohio, spent a vacation from the cares of practice at his old home in Churchville, N. Y., as has been his custom for a number of years. This year the doctor made the trip in an automobile, spending three days on the road, camping out wherever fancy dictated.

DR. F. R. WHIPPLE, formerly head of Veterinary Department and Professor of Veterinary Medicine and Surgery in the West Virginia University, has opened a veterinary hospital at Peoria, Ill., where he says he hopes to receive the REVIEW for many years to come. We certainly wish the doctor much success.

ADMIRAL TOGO and his staff traveled to Toronto in a private astringent, soda as an antacid, lime as a reconstructive; and the car attached to the train of the New York delegation. When the Admiral returned to his car from the dining car (passing through the special cars of the veterinary party), he was accorded a salutation from the American Veterinary Medical Association, which he acknowledged gracefully.

PROF. L. A. MERILLAT, of Chicago, and Dr. J. H. Blattenburg, of Lima, Ohio, two of our most prominent surgeons, have accepted an invitation to attend the meeting of the New York State Veterinary Medical Society, to be held in Brooklyn, September 12-14. Dr. Blattenburg has consented to do the Williams' operation for roaring, demonstrating a new feature in the technique. Prof. Merillat will do some operations not yet designated.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary
Alumni Ass'n, N. Y.-A. V. C.....	.....	141 W. 54th St.	J. F. Carey, East Orange, N.J.
American V. M. Ass'n.....	Aug. 22-25, 1911.	Toronto, Can.	C. J. Marshall, Philadelphia.
Arkansas Veterinary Ass'n.....	.....	.....	Horace E. Rice, Little Rock.
Ass'n Médécale Veterinare Française "Laval".....	1st and 3d Thur. of each month	Lec.Room,Laval Un'y,Mon.	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	H. A. Smith, Chicago, Ill.
B. A. I. Vet. In. A., So. Omaha ..	3d Mon. ea. mo.	S.Omaha, Neb	E. J. Jackson, So. Omaha.
California State V. M. Ass'n.....	.....	San Francisco.	J. J. Hogarty, Oakland.
Central Canada V. Ass'n.....	.....	Ottawa	A. E. James, Ottawa.
Central N. Y. Vet. Med. Ass'n....	June and Nov...	Syracuse	W. B. Switzer, Oswego.
Chicago Veterinary Society.....	2d Tues. ea. mo	Chicago	D. M. Campbell Chicago.
Colorado State V. M. Ass'n.....	.....	.....	B. F. Kaupp, Ft. Collins.
Connecticut V. M. Ass'n.....	Feb. 6, 1912.....	Hartford	B. K. Dow, Willimantic.
Essex Co.(N. J.) V. M. A.....	3d Mon. ea. mo.	Newark, N. J.	J. F. Carey,East Orange,N.J
Genesee Valley V. M. Ass'n.....	.....	.....	J. H. Taylor, Henrietta.
Georgia State V. M. A.....	Dec. 21-22, 1911.	Atlanta.....	P. F. Bahnsen, Americus
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Idaho Ass'n of Vet. Graduates....	Oct. 10-12, 1911..	Boise.....	G. E. Noble, Boise.
Illinois State V. M. Ass'n.....	Call of President	.....	L. A. Merillat, Chicago.
Indiana Veterinary Association...	....	.....	E. M. Bronson,Hartford City
Iowa Veterinary Ass'n.....	....	.....	H. C. Simpson, Denison.
Kansas State V. M. Ass'n...	....	.....	B. Rogers, Manhattan.
Kentucky V. M. Ass'n.....	....	.....	D. A. Piatt, Lexington.
Keystone V. M. Ass'n.....	....	.....	E. H. Yunker, Phila.
Louisiana State V. M. Ass'n.....	....	.....	E. P. Flower, Baton Rouge.
Maine Vet. Med. Ass'n	October, 1911....	Walerville.....	C. W. Watson, Brunswick
Maryland State Vet. Society.....	....	Baltimore.....	H. H. Counselman, Sec'y.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	J. H. Seale, Salem.
Michigan State V. M. Ass'n.....	Feb., 1912.....	Mich.Agr.Col.	Judson Black, Richmond.
Minnesota State V. M. Ass'n.....	July 12, 13. 1911..	Austin	G. Ed. Leech, Winona.
Mississippi State V. M. Ass'n....	....	.....	J. C. Robert, Agricultural Col.
Missouri Valley V. Ass'n.....	July 10-12, 1911..	Omaha.....	Hal. C. Simpson, Denison, Ia.
Missouri Vet. Med. Ass'n	....	.....	D. L. Luckey,
Montana State V. M. A.....	....	Helena.....	W. S. Swank, Miles City.
Nebraska V. M. Ass'n.....	January, 1912...	Lincoln.....	W. H. Tuck,Weeping Water.
New York S. V. M. Soc'y.....	Sept. 12-14, 1911.	Brooklyn	H. J. Milks, Ithaca, N. Y.
North Carolina V. M. Ass'n.....	June 1912	Raleigh.....	M. J. Ragland, Salisbury.
North Dakota V. M. Ass'n.....	Jan. 1912	Agricul. Col..	C.H.Babcock,New Rockford.
North-Western Ohio V. M. A.....	Feb. and Nov...	Lima.	A. J. Kline, Wauseon.
Ohio State V. M. Ass'n.....	....	.....	O. V. Brumley, Columbus.
Ohio Soc. of Comparative Med..	Annually	Up'r Sandusky	F. F. Sheets, Van Wert, Ohio
Ohio Valley Vet. Med. Ass'n.....	July, 1911.....	Henderson....	J. C. Howard, Sullivan.
Oklahoma V. M. Ass'n.....	....	.....	M. P. Hunt, Enid.
Ontario Vet. Ass'n.....	Annually	Toronto	C. H. Sweetapple, Toronto.
Pennsylvania State V. M. A.....	Sept. 5	Pittsburg	John Reichel, Glenolden
Philippine V. M. A.....	Call of President	Manila.....	David C. Kretzer, Manila.
Portland Vet. Med. Ass'n.....	4th Tues. ea. mo.	Portland, Ore.	Sam. B. Foster, Portland,Ore
Province of Quebec V. M. A.....	....	Mon. and Que.	Gustave Boyer, Rigaud, P. Q.
Rhode Island V. M. Ass'n.....	Jan. and June..	Providence ...	J. S. Pollard, Providence
South Carolina Ass'n of Veterinarians.....	August, 1911	Charleston....	Clarence E. Smith, Greenville
So. Illinois V. M. and Surg. A....	Aug. 1-3, 1911....	Centralia.....	F. Hockman, Louisville.
St. Louis Soc. of Vet. Inspectors.	1st Wed. fol. the 2d Sun. ea. mo.	St. Louis.....	Wm.T.Conway,St.Louis,Mo.
Schuylkill Valley V. M. A.....	June 21, 1911....	Reading.....	W. G. Huyett, Wernersville.
Soc. Vet. Alumni Univ. Penn.....	....	Philadelphia..	B.T.Woodward,Wash'n,D.C.
South Dakota V. M. A.....	2d Tues. July '11	Watertown...	S. W. Allen, Watertown.
Southern Auxiliary of California State V. M. Ass'n.....	Jan.Apl.Jy.Oct.	Los Angeles..	A. D. Hubbell, Los Angeles.
So. St. Joseph Ass'n of Vet. Insp..	4th Tues. ea. mo.	407 Ill. Ave....	H. R. Collins, So. St. Joseph
Tennessee Vet. Med. Ass'n.....	....	.....	A. C. Topmiller,Murfreesboro
Texas V. M. Ass'n.....	Call Exec. Com.	.....	R. P. Marsteller, College Sta
Twin City V. M. Ass'n.....	2d Thu. ea. mo .	St.P.-Minneap	S. H. Ward, St. Paul, Minn.
Vermont Vet. Med. Ass'n	....	....	G. T. Stevenson, Burlington.
Veterinary Ass'n of Alberta.....	....	....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Vet. Ass'n Dist. of Columbia.....	3d Wed. ea. mo..	514—9th St., N. W.....	M. Page Smith, Wash., D.C.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
Vet. Med. Ass'n of N. J.....	July, 1911.....	N. Brunswick.	W. Herbert Lowe, Paterson.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	R. S. MacKellar, N. Y. City.
Veterinary Practitioners' Club....	Monthly.....	Jersey City ...	A. F. Mount, Jersey City.
Virginia State V. M. Ass'n	2d Fri. July, 1911	Norfolk.....	W. G. Chrisman, Raleigh.
Washington State Col. V. M. A ..	1st & 3d Fri. Eve.	Pullman.....	R. J. Donohue, Pullman.
Washington State V. M. A.....	....	Seattle.....	J. T. Seely, Seattle.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh....	F. Weitzell, Allegheny.
Wisconsin Soc. Vet. Grad	July 18, 19, 1911.	Green Bay....	J. P. West, Madison.
York Co. (Pa.) V. M. A.....	....	.....	E. S. Bausticker, York, Pa.

PUBLISHERS' DEPARTMENT.

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ANYONE anticipating the purchase of a lock float, would do well to look up HAUSSMANN AND DUNN Co.'s list on page 1 (adv. dept.) of this issue of the REVIEW. They have a very interesting catalogue, also. Write them, mentioning the REVIEW.

HAVE you tried "*Septico*" in your surgical work? See a description of it on the upper half of the back cover page of this issue of the REVIEW; then write PARKE, DAVIS & Co. for literature.

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ANTITETANIC SERUM should form part of a routine treatment for punctured wounds of the feet in horses. Stable conditions generally, favor the presence of tetanus germs, and a prophylactic dose of antitetanic serum is in line with scientific principles. C. BISCHOFF & Co., whose advertisement appears on page 9 (adv. dept.) of this issue of the REVIEW, are the sole importers of Antitetanic Serum (Von Behring).